

MEMORANDUM Northern Regional Office

TO:

File

FROM:

Anna Westernik, Water Permit Writer

DATE:

October 6, 2014

SUBJECT:

2014 VPDES Permit Modification for FEMA Industrial (VA0091464)

The Federal Emergency Management Agency (FEMA) facility is located on a mountain ridge on Route 601 near Bluemont, Virginia that has been in operation since the early 1900s. The facility encompasses administrative programs, training and housing facilities, and emergency and disaster relief support.

The VPDES permit for industrial storm water discharge was originally issued by the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) in 2006. The 2006 permit and the subsequent 2011 reissuance monitored two storm water outfalls and two industrial discharge internal outfalls. These outfalls are named 001, 101, 002, and 201. Outfalls 001 and 101 are on the west side of the FEMA property whereas Outfalls 002 and 201 are on the east side of the FEMA property.

In 2012, FEMA constructed a new storm water outfall on the east side of the property. The newly constructed storm water outfall is directly south of the present Outfall 002 on the cast side of the FEMA property. Flow to this outfall drains through a new manhole, enters a small pond, and then a large pond for sediment capture. Both ponds are unlined. In the event the large pond does overflow, approximately 50 to 75 feet of riprap is installed outside the fence boundary to slow down flow and hence, protect the slope from further erosion. Sampling from this outfall shall occur at the discharge point after the pond.

The newly constructed outfall at the exit of the pond is identified as Outfall 003 and the internal process water outfall discharging to the pond is identified as Outfall 301. Listed below is a description of the industrial outfalls on the east side of the property.

Outfall 002

Outfall 002 receives sump and storm water from Outfall 201 and localized sheet runoff from a contiguous wooded area before discharge to an unnamed tributary of Jeffries Branch. Before the construction of the new outfalls and upgrading of the storm water discharge route, this outfall received the majority of the storm water discharges from the east side of the facility.

Outfall 201

Internal Outfall 201 discharges to Outfall 002 and receives sump water from office buildings and storm water from office buildings areas and paved surfaces (roads and parking lots) on a small section of the east side of the facility. This discharge enters a series of two ponds for treatment by aeration and sedimentation. Additional treatment is provided by two weirs in the ponds that collect oil. Siphons remove the collected oil and grease for disposal. Used liquid oil is recycled and non-liquid oil products are disposed of as hazardous waste. The volume of storm water and sump discharges from this outfall has also been reduced due to the construction of the new outfalls and the upgrading of the storm water discharge route.

Outfall 003

Outfall 003, which discharges to an unnamed tributary of Jeffries Branch where it exits the FEMA property, receives drainage from the eastern side of the property and sump and cooling water discharge. Discharge from Outfall 301 and storm water from the eastern portion of the facility travel through this outfall. This is a new wet weather discharge outfall on the eastern side of Mt. Weather.

Outfall 301 (Sump Discharge, Cooling Water Discharge, Storm Water)

Internal Outfall 301 discharges Outfall 003 and receives sump pump discharges, condensate from air conditioning towers, cooling water discharges during the cleaning of the cooling tower, and storm water from the main complex of buildings on the eastern side of the property. These discharges enter a storm water conveyance system from the top eastern portion of the facility and are piped down the hill for treatment through entering a small basin that discharges into a larger basin providing sedimentation prior to the Outfall 003 discharge. During periods of non precipitation, the flow to this outfall is minimal; discharge does not occur unless a cooling tower is cleaned and water released.

In addition to the outfalls located on the east side of the facility, FEMA has an internal outfall for a water treatment plant discharge (Outfall 101) and a storm water outfall (Outfall 001) on the west side of the facility that discharge to an unnamed tributary of Reservoir Hollow (see Attachment 1, 2011 Fact Sheet and Table 1 of this memorandum).

See Attachment 2 - NPDES Permit Industrial Rating Worksheets
(Score Outfall 001, West Side of Facility = 70, Minor)
(Score Outfall 002, East Side of Facility = 25, Minor)
(Score Outfall 003, East Side of Facility = 15, Minor)
See Attachment 3 -- Facility schematic.

Permit Action

FEMA first requested a permit modification to the VPDES permit number VA0091464 on April 11, 2013, to include the new Outfall 003, and internal Outfall 301. Upon completion of construction and collection of monitoring data characterizing the discharge of the new outfalls, FEMA updated their permit modification request on March 27, 2014. This permit action incorporates the new outfalls into the existing VPDES permit to ensure the discharges meet the Virginia Water Quality Standards. Additionally, this modification re-evaluates the copper limits for Internal Outfalls 101 and 201 and the storm water monitoring endpoints for Outfalls 001 and 002. Finally, nutrient monitoring is added at Outfall 002 in this modification in accordance with the sediment TMDL for the Goose Creek Watershed. Table 1 below provides a summary of the discharges present at the FEMA facility.

OUTFALL NO.	LATITUDE AND LONGITUDE	DISCHARGE SOURCES AND FREQUENCY	TREATMENT	FLOWS
Outfall 001 Storm Water Discharge Western Side of Facility) 225 Acres Drained 12 Acres of Impervious Surface	39° 03° 58.7° 77° 54° 08.5°	Runoff from paved roads, construction activities, oil storage areas (covered tank), hazardous waste storage areas (covered metal buildings), and road salt storage (covered area). WTP plant discharge and sump pump discharge.	Overland Flow	Variable
		Intermittent storm water discharge.		
nternal Outfall 101 Water Treatment Plant)	39° 03' 57.3" 77° 53' 58.9"	Discharge from a lagoon receiving WTP wastewater and storm water.	Sedimentation	Variable
		Outfall discharges approximately two times per month for two to three hours to discharge backwash wastewater. Outfall discharges overnight twice per year to discharge basin cleanout wastewater.		
Outfall 002 Etorm Water Discharge Eastern Side of Facility) Acres Drained Acres of Impervious Surface	39° 03' 29.4" 77° 53' 06.0"	A storm water collection system captures overflow from the potable water system, sumps, drainage from vehicle maintenance and fueling area, and a warehouse loading/unloading area. Sheet flow from parking lots, satellite dish/radio tower area, and paved and gravel roads from construction activity.	Storm water runoff and sump discharge is captured in a series of three small ponds that treat by aeration and sedimentation. A weir in the pond assists in containing oil from parking lots, vehicles,	Variable
		Intermittent storm water discharge.	etc. Some treatment by overland flow.	
nternal Outfall 201	39° 03' 33.3" 77° 53' 0.4.2"	Discharge from a spring water sump and storm water. Sump discharge is continuous. Storm water discharge is intermittent.	Discharge in a series of three small ponds that treat by aeration and sedimentation. Oil collected using a weir in the pond.	Variable
Outfall 003 Storm Water Discharge Eastern Side of Facility) 43 Acres Drained 29 Acres of Impervious Surface	39° 03′ 31″ 77° 53′ 06″	Intermittent storm water discharge. A storm water collection system captures overflow from the potable water system, sumps, drainage from vehicle maintenance and fueling area, and a warehouse loading/unloading area.	Sedimentation basins prior to discharge.	Variable
		Sheet flow from parking lots, satellite dish/radio tower area, and paved and gravel roads from construction activity.		s
internal Outfall 301 Batch Cooling Water Discharge Eastern Side of Facility)	39° 03' 33" 77° 53' 07"	Discharge from a spring water sump, air conditioning condensate, and storm water. Sump discharge is continuous. Storm water and cooling water discharge is intermittent. The process flow is normally too low in volume to measure. Process flow from cooling water is discharged and	Sedimentation basins	Variable

Attachment 4 - January 2013 Site Visit Memorandum.

Attachment 5 -- Topographic map 216C (Ashby Gap) shows outfall locations for Outfall 301 and 003.

Effluent Screening

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

<u>Internal Outfall 101</u> – Copper effluent data obtained from the Discharge Monitoring Reports (DMRs) from the first quarter of 2012 through the first quarter of 2014 have been reviewed and determined to be suitable for evaluation.

<u>Internal Outfall 201</u> – Copper effluent data obtained from the Discharge Monitoring Reports (DMRs) from the first quarter of 2012 through the first quarter of 2014 have been reviewed and determined to be suitable for evaluation.

<u>Internal Outfall 301</u> – FEMA personnel collected a forced batch discharge of cooling water on April 9, 2014. This data has been reviewed, entered into the permit record, and determined to be suitable for evaluation.

Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

	WLA	$= C_0 [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]$
		Qe
Where:	WLA	= Wasteload allocation
	C_{o}	= In-stream water quality criteria
	Q_e	= Design flow
	Q_s	= Critical receiving stream flow
		(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life
		criteria; harmonic mean for carcinogen-human health criteria; and
		30Q5 for non-carcinogen human health criteria)
	f	= Decimal fraction of critical flow
	\mathbf{C}_{s}	= Mean background concentration of parameter in the receiving stream.

The water segments receiving discharge via Internal Outfalls 101, 201, and 301 are considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there are no mixing zones and the WLAs are equal to the C_o .

Effluent Limitations Toxic Pollutants, Internal Outfalls 101, 201, 301:

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for municipal discharges and monthly average and daily maximum limitations be imposed for industrial discharges.

Hardness summaries for Outfalls 101 and 201 and criteria determinations and effluent limit evaluations for Outfalls 101, 201, and 301 are provided in **Attachment 6**. Since the flow from all internal outfalls is intermittent, toxic limits were evaluated using acute wasteload allocations only.

Metals:

Of the parameters found from the sampling of Internal Outfall 301 during a forced batch discharge of cooling water, only copper has designated acute criteria in the Virginia Water Quality Standards. Limits were calculated for copper and it was determined that a limit of $50 \mu g/L$ is warranted. However, due to the infrequent nature of the discharge, the discharge is an internal outfall, and evaluation for limits using only one data point of $105 \mu g/L$, only copper monitoring shall be required during the remainder of this permit cycle.

Copper was not detected in the effluent discharge from Outfall 101 from the first quarter of 2012 through the first quarter of 2014. Therefore, monitoring for copper and hardness was removed from the permit for this outfall. Using DMR data from the first quarter of 2012 through the first quarter of 2014, it was determined that copper limits are not needed at Outfall 201. Therefore, copper limits and hardness monitoring are removed from Internal Outfall 201. Additionally, the compliance schedule for copper at Outfall 201 is removed from this permit.

Temperature:

A temperature limit has been placed on Outfall 003 due to the influence of heated waste streams within the drainage area (e.g., non-contact cooling water). This limit has been removed from Outfall 002 since it is no longer receiving the cooling water discharge.

Nutrients:

In order to assess the effect of nutrient discharge on a local benthic impairment on the downstream receiving waters, this facility shall perform quarterly nutrient monitoring for total nitrogen and total phosphorus at Outfalls 002 and 003. Section 4 of the Planning Statement dated May 16, 2014 requests that the facility monitor nutrients at Outfall 003 to support the development of a benthic TMDL for Jeffries Branch. Since Outfall 002 discharges in an adjacent location, nutrient monitoring has also been added as a requirement for this outfall also. Section 4 of the Planning Statement discusses the following:

"In support of the development of a benthic TMDL for Jeffries Branch in the near future, DEQ staff requests that this facility monitor quarterly nutrient monitoring (total phosphorus, nitrate, nitrite and TKN) at this outfall. Nutrient monitoring is requested of facilities that are located within a distance of 5 miles upstream of a benthic impairment."

See Attachment 7 for the complete Planning Statement.

Effluent Limitations, Outfalls 001 and 002 - Storm Water Only Pollutants

The requirement to monitor copper, cyanide, and zinc at Outfall 001 and copper and zinc at Outfall 002 has been removed from this permit since these parameters were all found to be below detection level during 2012 and 2013 monitoring. The other benchmark parameters remain in Outfall 001 and 002 monitoring.

TABLE 2 Outfall 001					
Storm Water Benchmark Monitoring Concentration Values					
Parameter	Maximum Limitation				
Total Suspended Solids (TSS)	100 (mg/L)				

TABLE 3 Outfall 002						
Storm Water Benchmark Monitoring Concentration Values						
Parameter	Maximum Limitation					
Total Suspended Solids (TSS)	70 (mg/L)					

Effluent Limitations, Outfall 003- Storm Water Only Pollutants.

These storm water discharges are considered intermittent and as such, the primary concern would be acute water quality impacts. The duration of this discharge is not expected to occur for four or more consecutive days (96 hours). Water Quality Criteria for human health (and chronic toxicity to a lesser degree) are based upon long term, continuous exposure to pollutants from effluents, and storm water discharges are short term and intermittent. Therefore, it is believed that acute criteria should be used to derive the screening criteria.

Screening (i.e., decision) values expressed as monitoring end-points have been established at two times the acute water quality criterion established in the Virginia Water Quality Standards (9VAC25-260 et.seq.). There two primary reasons the end-points are established at two times the criterion. First, the acute criteria is defined as one-half of the final acute value (FAV) for a specific toxic pollutant. The FAV is determined from exposure of the specific toxicant to a variety of aquatic species, and is based on the level of a chemical or mixture of chemicals that does not allow the mortality, or other specified response, of aquatic organisms. These criteria represent maximum pollutant concentration values, which when exceeded, would cause acute effects on aquatic life in a short time period.

Second, if it is raining a sufficient amount to generate a discharge of storm water, it is assumed that the receiving stream flow will be greater than the critical flows of zero million gallons per day for intermittent streams due to storm water runoff within the stream's drainage area. In recognition of the FAV and the dilution caused by the rainfall, the monitoring end points were calculated by multiplying the acute Water Quality Criteria by two (2). The criteria for all pollutants can be found in **Attachment 6**.

These monitoring end-point screening values are applied solely to identify those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP). Storm water outfall data (pollutant specific) submitted by the permittee that are above the established monitoring end-point levels requires monitoring in Part I.A. of the permit for that specific outfall and pollutant. Should storm water outfall monitoring data exceed the established monitoring end point, the permittee shall reexamine the effectiveness of the SWPPP and BMPs in use and modify as necessary to address any deficiencies that caused the exceedances.

Since direct sampling at Outfall 003 (after the sedimentation pond) could not be conducted due to access restrictions at the time of sampling, monitoring from Outfall 301 was conducted to represent Outfall 003. Chromium, copper, nickel, zinc, and cyanide were detected at Outfall 301 during storm water sampling events on January 16, 2013 and February 26, 2013 (monitoring information found in the permit file of record). Storm water benchmark monitoring shall be required for these parameters at Outfall 003 based on acute criteria and a hardness value of 120 mg/L at Outfall 301 during the storm water monitoring event. See Table 4 below.

TABLE 4 Outfall 003 Storm Water Benchmark Monitoring Concentration Values							
Parameter Maximum Limitation							
Total Suspended Solids (TSS)	70 (mg/L)						
Chromium	32 μg/L*						
Copper	32 μg/L						
Cyanide	44 μg/L						
Nickel	420 μg/L						
Zinc	280 μg/L						

^{*}Measured as Chromium 6

TABLE 5 -- Effluent Limitations/Monitoring Requirements for Outfall 001^{a, b} (Western Portion of Facility)

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR	D	MONITORING REQUIREMENTS				
FARAVIETER	LIMITS		<u>Daily</u> <u>Maximum</u>	Minimum	<u>Maximum</u>	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/Q ^c	Estimate
pH (Standard Units)	1	NA	NA	6.5	9.5	1/Q ^c	Grab
TSS (mg/L)	3	NA	NA	NA	NL^{d}	1/Q°	Grab

TABLE 6 -- Effluent Limitations/Monitoring Requirements for Outfall 101^{a, c}
Water Treatment Plant Wastewater

Flow from this industrial outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR	D	ISCHARGE L	MONITORING REQUIREMENTS			
IANAMETER	LIMITS	Monthly Average	<u>Daily</u> <u>Maximum</u>	Minimum	<u>Maximum</u>	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	I/M	Estimate
TSS (mg/L)	1, 2	30	60	NA	NA	I/M	5G/8HC
pH (Standard Units)	1	NA	NA	6.5	9.5	1/M	Grab
Total Residual Chlorine (mg/L)	1, 2	0.011	0.011	NA	NA	1/M	Grab
Acute Toxicity C. dubia (NOAEC)	NA	NA _.	NA	NA	NL	Per Permit (Part I.C)	Grab
Acute Toxicity P. promelas (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I.C)	Grab

TABLE 7 -- Effluent Limitations/Monitoring Requirements for Outfall 002^{a, b} (Drainage from Eastern Portion of Facility)

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS	D	ISCHARGE	MONITORING REQUIREMENTS			
PARAWIE I ER	FOR LIMITS	Monthly Average	<u>Daily</u> <u>Maximum</u>	Minimum	Maximum	Frequency	<u>Sample</u> <u>Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/Q ^c	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Q ^c	Grab
TSS (mg/L)	3, 4	NA	NA	NA	NL^d	1/Q ^c	Grab
Total Kjeldahl Nitrogen (TKN) (mg/L)	4	NA	NA	NA	NL	1/Q°	Grab
Nitrate+Nitrite, as N (mg/L)	4	NA	NA	NA	NL	1/Q°	Grab
Total Nitrogen ^{.f} (mg/L)	4	NA	NA	NA	NL	1/Q ^c	Calculated
Total Phosphorus (mg/L)	4	NA	NA	NA	NL	1/Q ^c	Grab

TABLE 8 – Effluent Limitations/Monitoring Requirements for Outfall 201^{a, e} (Sump Water)

Flow from this storm water and industrial wastewater outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR		DISCHAR	GE LIMITAT	MONITORING REQUIREMENTS			
IAMAMETER	LIMITS	Monthly Daily		Maximum	Frequency	Sample Type		
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate	
pH (Standard Units)	1	NA	NA	6.0	9.0	1/M	Grab	
TPH (mg/L) ^g	3, 5	NA	NA	NA	15	1/M	Grab	
Acute Toxicity C. dubia (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I. C)	Grab	
Acute Toxicity	NA	NA	NA	NA	NIT	Per Permit	Cash	
P. promelas (NOAEC)	NA	IVA	INA	INA	NL	(Part 1.C)	Grab	

TABLE 9 -- Effluent Limitations/Monitoring Requirements for Outfall 003 a, b (Drainage from Eastern Portion of Facility)

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

	BASIS DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
PARAMETER	FOR LIMITS	Monthly Average	<u>Daiły</u> <u>Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	Frequency	Sample Type	
Flow (MGD)	NA	NL	NA	NA	NL	1/Q ^c	Estimate	
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Q ^c	Grab	
Temperature (degrees Celsius)	1	NA	NA	NA	31.	1/Q ^c	Immersion Stabilization	
TSS (mg/L) ^d	3, 4	NA	NA	NA	NL^d	1/Q ^c	Grab	
Total Recoverable Chromium (µg/L) ^d	1	NA	NA	NA	NL^d	1/Y ^h	Grab	
Total Recoverable Copper (µg/L) ^d	1	NA	NA	NA	NL^d	1/Y ^h	Grab	
Cyanide (µg/L) ^d	-1	NA	NA	NA	NL^d	$1/Y^h$	Grab	
Total Recoverable Nickel (µg/L) ^d	1	NA	NA	NA	NL^d	1/Y ^h	Grab	
Total Recoverable Zinc (µg/L) ^d	1	NA	NA	NA	NL^d	1/Yh	Grab	
Total Kjeldahl Nitrogen (TKN) (mg/L)	4	NA	NA	NA	NL	1/Q ^c	Grab	
Nitrate+Nitrite, as N (mg/L)	4	NA	NA	NA	NL	1/Q°	Grab	
Total Nitrogen ^f (mg/L)	4	NA	NA	NA	NL	1/ Q ^c	Calculated	
Total Phosphorus (mg/L)	4	NA	NA	NA	NL	1/Q ^e	Grab	

TABLE 10 – Effluent Limitations/Monitoring Requirements for Outfall 301^{a, c} (Cooling Water)

Flow from this industrial wastewater outfall is variable and is dependent upon the volume of cooling water released. Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR	D	ISCHARGE	MONITORING REQUIREMENTS			
TAKAMETEK	LIMITS	Monthly Average	<u>Daily</u> <u>Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	2/DIS	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	2/DIS	Grab
Total Recoverable Copper (µg/L)	1	NA	NA	NA	NL	2/DIS	Grab
Total Hardness (mg/L)	3	NA	NA	NA	NL	2/DIS	Grab

*BASIS FOR LIMITS KEY

- Virginia Water Quality Standards (1/06/2011).
- 2. General Permit for Potable Water Treatment Plants (9 VAC 25-860)
- Best Professional Judgment.
- Sediment TMDL for the Goose Creek Watershed
- 5. 9VAC25-120.

NL - No limitation, Monitoring required

NA - Not Applicable

1/Q - Once per quarter

1/M - Once per month

1/Y - Once per year.

2/DIS - Two samples per discharge

Estimate - Reported flow is to be hased on the technical evaluation of the sources contributing to the discharge.

Grab - An individual sample collected in less than 15 minutes.

5G/8H-C Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time

intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

Immersion Stabilization - A calibrated device

A calibrated device is immersed in the effluent stream until the temperature reading is stabilized.

- a. All effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- b. All samples from Outfalls 001, 002, and 003 shall be collected from the discharge resulting from a storm event.
- c. The quarterly monitoring periods shall be January through March, April through June, July through September, and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.
- d. See Part 1.E.7 of the permit for monitoring end-points.
- e. All samples from Internal Outfalls 101 and 201 shall be collected during "dry periods" (at least 72 hours after a measurable storm event). Samples collected from Internal Outfall 301 shall be collected during a batch discharge event of cooling water.
- f. Total Nitrogen = Sum of TKN and NO_2+NO_3 N and shall be calculated from the results of those tests.
- g. Total Petroleum Hydrocarbons (TPH) is the sum of individual gasoline range organics and diesel range organics or TPH-GRO and TPH-DRO to be measured by EPA SW 846 Method 8015C (2007) for gasoline and diesel range organics, or by EPA SW 846 Methods 8260B and 8270D. If the combination of Methods 8260B and 8270D is used, the lab must report the total of gasoline range organics, diesel range organics and polynuclear aromatic hydrocarbons.
- h. The annual monitoring period shall be January 1 December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (January 10).

Anti-Backsliding

The removal of the copper limits from Internal Outfalls 101 and 201 does not constitute backsliding because the limits are not in effect. The temperature limit is not being removed; it is being transferred from Internal Outfall 201 to 301.

Public Notice Information

First Public Notice Date:

8/13/2014

Second Public Notice Date:

8/20/2014

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: Northern DEQ Regional Office, 13901 Crown Court, Woodbridge, VA 22193, telephone No. (703) 583-3837, anna.westernik@deq.virginia.gov. See Attachment 8 for a copy of the public notice document, and the public notice period.

Persons may comment in writing or by e-mail to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

Staff Comments

On September 23, 2014, at the request of Bonnie Mattingly of the Goose Creek Association, DEQ participated in a water quality forum sponsored by the Goose Creek Association and Piedmont Environment Council in regard to the permit modification of the FEMA Industrial Permit, the Storm Water Pollution Prevention Control Plan for FEMA, changes made to the FEMA Sewage Treatment Plant Permit, the forthcoming Jeffries Branch TMDL, and tree removal at the FEMA facility. DEQ staff made a presentation to the public and answered questions during this informal forum; Ms. Mattingly facilitated the program. Approximately 20 people attended the forum including representatives from the Goose Creek Association, the Piedmont Environmental Council, Cleremont Farm, and Save Our Streams. This forum allowed for an open discussion about water quality issues concerning the citizens of the Jeffries Branch Watershed and also included discussion about the discharge from FEMA into Reservoir Hollow in Clarke County. The Goose Creek Association requested this forum to educate citizens concerned about the modification of the VPDES industrial permit for FEMA and other water quality concerns regarding the FEMA facility.

Attachments

Attachment 1 2011 Fact Sheet

Attachment 2 NPDES Permit Industrial Rating Worksheets

Attachment 3 Facility Schematic

Attachment 4 January 2013 Site Visit Memorandum

Attachment 5 Topographic Map 216C (Ashby Gap)

Attachment 6 Hardness Summaries for Outfalls 101 and 201, Criteria Determinations, Effluent Limit Evaluations

Attachment 7 Planning Statement Dated May 16, 2014

Attachment 8 Public Notice

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Industrial permit. The discharge consists of water treatment plant backwash water, sump pump water from building underdrains, cooling water, and storm water runoff associated with industrial activity. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language, as appropriate, to reflect current agency guidance. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1.	Facility Name and Mailing Address:	FEMA Industrial Mount Weather Emergency Operations Center P.O. Box 129 Berryville, VA 22611	SIC Codes: 9229, 4941 4961, 4959	 Civil Defense Agencies Water Supply Steam and Air Conditioning Supply Sanitary Services 		
	Facility Location:	Mount Weather Emergency Operations Center 19844 Blue Ridge Mountain Road Berryville, VA 20135	Counties:	Loudoun/Clarke		
	Facility Contact Name:	Peter Mango	Telephone Number:	540-542-2497		
2.	Permit No.:	VA0091464	Expiration Date of previous	9/11/11		
	Other VPDES Permits associated with	this facility:	VA0024759	· · · · ·		
	Other Permits associated with this fac	ility:	VAR000012609 (Waste); 3022703 (UST/AST); VA2043634 (Public Water Supply); 73694 (Air)			
	E2/E3/E4 Status:	NA				
3.	Owner Name:	Department of Homeland Se	ecurity/FEMA			
	Owner Contact/Title:	Kathy Ellis Environmental Engineer	Telephone Number:	540-542-2176		
4.	Application Complete Date:	4/15/2011				
	Permit Drafted By:	Anna Westernik	Date Drafted:	6/3/2011		
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	6/20/2011		
	Draft Permit Reviewed By:	Bryant Thomas	Date Reviewed:	7/5/2011		
	Public Comment Period:	Start Date: 9/15/2011	End Date:	10/14/2011		
	~		=			

Receiving Waters Information: The flow frequencies for intermittent streams are 0.0 MGD. Reservoir Hollow is spring fed. The flow frequency is undeterminable, and thus equivalent to 0.0 MGD.

Potable Water Treatment Plants; 9 VAC 25-120 --General Permit for Discharges from Petroleum-Contaminated Sites, Groundwater Remediation and

Outfalls 001 and 101	(Western Portion of Faci	lity)	
Receiving Stream Name:	Reservoir Hollow and Reservoir Hollow, UT	Stream Code:	1BREH
Drainage Area at Outfall 001:	0.037 sq.mi.	River Mile:	Outfall 001 - 3.54
Stream Basin:	Potomac River	Subbasin:	Shenandoah River
Section:	1	Stream Class:	IV
Special Standards:	pH 6.5-9.5	Waterbody ID:	VAV-B58R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD
303(d) Listed:	No, but downstream PCB impairment	30Q10 Flow:	0.0 MGD
TMDL Approved:	Yes (PCB)	Date TMDL Approved:	10/1/2001
Outfalls,002 and 201	(Eastern Portion of Facili	$(\mathbf{t}_{\mathbf{y}})$	
Receiving Stream Name:	Jefferies Branch, UT	Stream Code:	1AXLA
Drainage Area at Outfall 002:	0.036 sq.mi.	River Mile:	Outfall 002 – 0.61
Stream Basin:	Potomac River	Subbasin:	Potomac River
Section:	9	Stream Class:	Ш
Special Standards:	None	Waterbody ID:	VAN-A05R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD
303(d) Listed:	No, but downstream bacteria, benthic, PCB impairments	30Q10 Flow:	0.0 MGD
TMDL Approved:	Yes (Bacteria, Benthic)	Date TMDL Approved:	10/20/2006; 4/16/2004
6. Statutory or Regulatory Ba	sis for Special Conditions a	and Effluent Limitations:	
✓ State Water Contro	•	EPA Guidelines	
✓ Clean Water Act		✓ Water Quality Stand	ards
✓ VPDES Permit Reg	gulation	Other: (9 VAC 25-8	60 General Permit for

EPA NPDES Regulation

7.	Licensed Operator R	Requirements: None	
8.	Reliability Class: N	one	
9.	Permit Characterizat	tion:	
	Private	Effluent Limited	Possible Interstate Effect
	✓ Federal	✓ Water Quality Limited	Compliance Schedule Required
	State	✓ Toxics Monitoring Program Required	Interim Limits in Permit
	POTW	Pretreatment Program Required	Interim Limits in Other Document
	✓ TMDL	,	

10. Wastewater Sources and Description:

FEMA is a federal government facility located on a mountain ridge on Route 60 near Bluemont, Virginia that has been in operation since the early 1900s. The facility encompasses administrative programs, training and housing facilities, and emergency and disaster relief support. FEMA has water and sewage treatment plants, a police force, and fire/rescue personnel on site. The facility population varies greatly throughout the year depending on surge requirements. However, there are approximately 1,200 people who work at the facility.

Outfall 001

Outfall 001 consists of storm water that drains the western portion of the facility and any discharge that would occur from the water treatment plant lagoon (see Table 1 for description). The outfall receives storm water drainage from paved roads, oil storage areas (covered tanks), hazardous waste storage (covered metal buildings), road salt storage (covered shed), construction activities, and basement sump pump discharges. This outfall discharges into Reservoir Hollow above the abandoned reservoir for the Town of Berryville. Reservoir Hollow exits the property at Route 605 in Clarke County.

Outfall 101 (Water Treatment Plant)

The average potable water production from the Water Treatment Plant (WTP) is between 100,000 to 125,000 gpd. The plant uses numerous pump stations to draw raw water from the Shenandoah River through a flash mixer where a polymer based coagulant aid is added. Water then enters the flocculation and clarification basin where solids settle. The clarifier effluent enters two rapid sand filters prior to disinfection with chlorine gas in the clearwell. Sufficient chlorine is added to maintain a residual throughout the water distribution system. Sodium hexametaphosphate, a corrosion inhibitor, is added at the clearwell.

All backflush wastewater created by the WTP is discharged to a lagoon with a capacity of approximately 0.34 MG (9' deep x 100' long x 50' wide) located about one-half mile west of the WTP.

The WTP filters are usually backwashed monthly for approximately 15 minutes using clearwell water. The backwash process creates a maximum volume of approximately 30,000 gallons of wastewater. Additionally, the flocculation/clarification basin is drained and cleaned twice each year and discharged into the lagoon. The approximate volume of wastewater created by the cleaning of the basin during each occurrence is 270,000 gallons or 540,000 gallons/year.

Wastewater created by backwashing the filters and cleaning of the basin is discharged to a pipe under the WTP. The pipe runs approximately one-half mile west of the water treatment plant and downhill from the plant. It enters a lined basin that is one half of a lagoon. The remaining half of the lagoon accepts storm water runoff. Discharge from the filter backwash basin enters a pipe and runs further downhill to intersect with an unnamed tributary of Reservoir Hollow 0.18 rivermiles east of Ontfall 001.

Outfall 002

Outfall 002, which discharges to an unnamed tributary of Jefferies Branch where it exits the FEMA property, receives drainage from the eastern side of the property and sump and cooling water discharge. All discharge from Outfall 201 and storm water discharge from the drainage area south of Internal Outfall 201 travel through this outfall (See Table 1 for description).

Outfall 201 (Sump Discharge, Cooling Water Discharge, Storm Water)

Southwest of the east parking lot is a roadside discharge that receives sump pump discharges, condensate from air conditioning towers, and storm water from the main complex of buildings on the eastern side of the property. This discharge enters a series of two ponds for treatment by aeration and sedimentation. Additional treatment is provided by two wiers in the ponds that collect oil. Siphons remove the collected oil and grease for disposal. Used liquid oil is recycled and non-liquid oil products are disposed of as hazardous waste. Effluent from the ponds is piped under a road and discharged into an unnamed tributary of Jefferies Branch approximately 300 feet from the Outfall 002 discharge area.

See Attachment 1 – NPDES Permit Industrial Rating Worksheets
(Score Outfall 001, West Side of Facility = 70, Minor)
(Score Outfall 002, East Side of Facility = 15, Minor)
See Attachment 2 -- Facility schematic.

	TAB	LE 1 - Description of Outfalls		
OUTFALL NO.	LATITUDE AND LONGITUDE	DISCHARGE SOURCES AND FREQUENCY	TREATMENT	FLOWS
Outfall 001 Storm Water Discharge (Western Side of Facility) 225 Acres Drained 12 Acres of Impervious Surface	39° 03' 58.7" 77° 54' 08.5"	Runoff from paved roads, construction activities, oil storage areas (covered tank), hazardous waste storage areas (covered metal buildings), and road salt storage (covered area). WTP plant discharge and sump pump discharge. Intermittent storm water discharge.	Overland Flow	0.19 MGD
Outfall 101 (Water Treatment Plant)	39° 03' 57.3'' 77° 53' 58.9''	Discharge from a lagoon receiving WTP wastewater and storm water. Outfall discharges approximately two times per month for two to three hours to discharge backwash wastewater. Outfall discharges overnight twice per year to discharge basin cleanout wastewater.	Sedimentation	0.08 MGD
Outfall 002 Storm Water Discharge (Eastern Side of Facility) 160 Acres Drained 20 Acres of Impervious Surface	39° 03' 29.4" 77° 53' 06.0"	A storm water collection system captures overflow from the potable water system, sumps, drainage from a vehicle maintenance and fueling area, and a warehouse loading/unloading area. Sheet flow from parking lots, satellite dish/radio tower area, and paved and gravel roads from construction activity. Intermittent storm water discharge.	Storm water runoff and sump discharge is captured in a series of three small ponds that treat by aeration and sedimentation. A weir in the pend assists in containing oil from parking lots, vehicles, etc. Some treatment by overland flow.	0.051 MGD
Outfall 201	39° 03° 33.3°° 77° 53° 0.4.2°°	Discharge from a spring water sump, air conditioning condensate, and storm water. Sump discharge is continuous. Storm water and cooling water discharge is intermittent.	Discharge in a series of three small ponds that treat by aeration and sedimentation. Oil collected using a weir in the pond.	0.10 MGD

Attachment 3 - Topographic map 216C (Ashby Gap) shows outfall locations.

11. Sludge Treatment and Disposal Methods:

This is an industrial facility that does not generate or treat sewage sludge. Industrial residue accumulates in the water treatment plant lagoon. The permittee shall follow an approved Residue Management and Disposal Plan that details handling of the wasted industrial sludge.

12.a Discharges, Intakes, Monitoring Stations, Other Items in Water Body VAN-A05R

Individual Permits			
River Mile	Type,	Latitude/Longitude	Description
1.19 Jefferies Branch, UT	0.09 MGD Municipal Wastewater Discharge	38° 03' 32" 77° 52' 53"	FEMA Bluemont STP (VA0024759)
25.98 Goose Creek	0.075 MGD Municipal Wastewater Discharge	39° 03' 21" 77° 44' 38"	Foxcroft School (VA0024112)
3.07 Wancopin Creek	0.25 MGD Municipal Wastewater Discharge	38° 52' 23" 77° 43' 36"	Middleburg WWTP (VA0024775)
0.32 Goose Creek, UT	0.015 MGD Municipal Wastewater Discharge	38° 59' 27.1" 77° 47' 21.1"	Notre Dame Academy (VA0027197)
Single Family Homes	*/		1,112
Receiving Stream	Description		
Goose Creek, UT	Allen Fred Residence (VA	(G406470)	
Woolf's Mill Run	Latimer Howard L Reside	nce (VAG406193)	

12.b Discharges, Intakes, Monitoring Stations, Other Items in Water Body VAV-B58R

Drinking Water Intakes	by traditioning islandes, Other		Ex Section 1
Stream	Туре	Latitude/Longitude	Description
Shenandoah River	Drinking Water Intake	39° 06' 12" 77° 54' 46"	FEMA Drinking Water Intake
Shenandoah River	Drinking Water Intake	39° 05' 56" 77° 58' 31"	Town of Berryville Drinking Water Intake
Storm Water Industrial	1000	100	
Receiving Stream	Description	TO A SECURE OF THE PARTY OF THE	
Wheat Spring Branch, UT	BFI Waste Systems - Berry	ville Landfill (VAR050968)	
Non Metallic Mineral Min	ing		The Street Court of the Court o
Receiving Stream	Description	THE STATE OF THE STATE OF THE STATE OF	以此外,是李建林的城市,被对开西
Shenandoah River, UT	Stuart M. Perry, Inc Berr	yville (VAG840136)	

- 13. Material Storage: See Attachment 4.
- 14. Site Inspection: Performed by Anna Westernik and Susan Mackert on May 10, 2011 (see Attachment 5).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

Outfall 001 discharges into Reservoir Hollow. Reservoir Hollow flows to a reservoir for the Town of Berryville and to the Shenandoah River. The reservoir for the Town of Berryville is no longer used as a drinking water intake for the Town of Berryville. This discharge is in the VAV-B58R waterbody (Lower Shenandoah River). The Department of Environmental Quality (DEQ) does not monitor Reservoir Hollow. Monitoring is conducted downstream of the confluence of Reservoir Hollow and the Shenandoah River at Ambient Monitoring Station 1BSN022.63 on the Shenandoah River, approximately 5.26 miles downstream from Outfall 001. This station, located near the Department of Game and Inland Fisheries Boat launch on Route 7, is not representative of the Outfall 001 discharge because it is not in the direct vicinity of the discharge and is influenced by too many other factors.

A 51.1 mile segment of the Shenandoah River into which Outfall 001 ultimately discharges is impaired due to a 2004 Virginia Department of Health (VDH) advisory fish consumption advisory due to the presence of PCBs. A PCB Total Maximum Daily Load (TMDL) was approved by EPA for this segment of the Shenandoah River on October 1, 2001. The State Water Control Board approved the TMDL on March 23, 2004. PCBs were not detected in sampling collected from Internal Outfall 101 of this facility in January 2011. PCBs were not detected in storm water sampling conducted in June 2004 from Outfall 001.

Internal Outfall 201 and Outfall 002 discharge into unnamed tributaries of Jeffries Branch that flow to Jefferies Branch, Panther Skin Creek, Goose Creek and ultimately the Potomac River. These discharges are located in the VAN-A05R waterbody (Middle Goose Creek/Panther Skin Creek). The Department of Environmental Quality (DEQ) does not monitor Jefferies Branch and its tributaries. Panther Skin Creek is monitored upstream of its confluence of Jefferies Branch. The nearest downstream ambient monitoring station is located at Route 611 on Goose Creek (1AGOO30.75), approximately 10.9 miles downstream of Outfall 002. This station is not representative of the discharges because it is far downstream and thus, is influenced by too many other factors.

The 4.77-mile segment of Goose Creek from the Goose Creek impoundment to the confluence with the Potomac River is impaired for recreational use and aquatic life use due to *E. coli* bacteria and benthic impairments. EPA approved an *E. coli* TMDL for Goose Creek on May 1, 2003 and a sediment TMDL on April 26, 2004. These TMDLs were approved by the SWCB on June 17 and August 31, 2004, respectively. Outfalls 201 and 002 are industrial discharges that should not contain *E. coli* bacteria.

A 2004 Virginia Department of Health (VDH) fish consumption advisory was issued due to the presence of PCBs along Goose Creek from the crossing of the Dulles Greenway Road Bridge downstream until the confluence with the Potomac River. PCBs were not detected in sampling collected from Internal Outfall 201 of this facility in November 2006. PCBs were not detected in storm water sampling conducted in June 2004 from Outfall 001.

See Attachment 6, Planning Statement.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving streams for Outfalls 001 and 101, Reservoir Hollow and Reservoir Hollow, UT, are located within Section 1 of the Potomac and Shenandoah River Basin, and are Class IV waters. The receiving stream for Outfalls 002 and 201, Jefferies Branch, UT, is located within Section 9 of the Potomac River Basin and is a Class III water.

The Virginia Water Standards (9 VAC 25-260-50) state that Class II and IV waters must maintain a minimum dissolved oxygen (D.O.) of 4.0 mg/L or greater and a daily average D.O. of 5.0 mg/L or greater.

Class III waters must maintain a pH of 6.0-9.0 Standard Units (S.U.) and a maximum temperature of 32°C. Class IV waters must maintain a pH of 6.0-9.0 S.U. and a maximum temperature of 31°C. However, in the case of Section 1 of the Shenandoah River Subbasin, special standards are present that require pH be maintained between 6.5 and 9.5 S.U. due to the prevalence of limestone geology in the area.

Ammonia:

It is staff's best professional judgment that this is not a pollutant of concern since there are no sources on site in appreciable quantities.

Metals Criteria:

The 7Q10 of the receiving streams is zero and no ambient data is available; therefore, the effluent data for hardness can be used to determine the metals criteria. The hardness-dependent metals criteria for Internal Outfalls 101 and 201 in Attachment 7 are based on effluent value hardness values of 152 mg/L (collected on April 21, 2011) and 310 mg/L (collected on April 26, 2011), respectively.

Bacteria:

The Virginia Water Quality Standards (9VAC25-260-170.A.) establishes the following criteria to protect primary contact recreational uses:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Monthly Geometric Mean ¹
Freshwater E. coli (N/100 mL)	126

¹Four or more samples taken during any calendar month.

It is staff's best professional judgment that *E. coli* bacteria is not expected to be present in this industrial storm water discharge; therefore, limitations are not applicable to this facility.

Attachment 7 details other water quality criteria applicable to the receiving stream.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving streams, Reservoir Hollow and Reservoir Hollow, UT are located within Section 1 of the Potomac River Basin. This section has been designated a Class IV water with a special standards for pH of 6.5 to 9.5 S.U.. The receiving stream, Jefferies Branch, UT, is located within Section 9 of the Potomac and Shenandoah River Basin. This section has been designated a Class III water with no special standards.

The Special Standard of pH 6.5 to 9.5 S.U. was established to account for the natural occurrence of high pH values in the water in this region due to the prevalence of limestone geology.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on April 19, 2011 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2-mile radius of the discharges from each of the outfalls: Brook Floater, Wood Turtle, Upland Sandpiper, Loggerhead

Shrike, Henslow's Sparrow, Bald Eagle, Green Floater, and Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge.

16. Antidegradation (9VAC25-260-30):

The State Water Control Board's Water Quality Standards adopted in 1992 included an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving streams have been classified as Tier 1 based on an evaluation of the critical stream flows. The critical stream flows are either 0.00 MGD or undeterminable. At times, the streams may be comprised entirely of effluent. It is staff's best professional opinion that instream waste concentrations are 100% during critical stream flows, and the water quality of the streams will mirror that of the effluent. Permit limits proposed have been established by determining wasteload allocations that will result in attaining and/or maintaining all water quality criteria applicable to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development (Internal Outfalls 101 and 201):

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

- 1) <u>Internal Outfall 101</u> -- January and March 2011 effluent data obtained from Attachment A and the permit application have been reviewed and determined to be suitable for evaluation.
- 2) <u>Internal Outfall 201</u> November 2006 effluent data has been reviewed and determined to be suitable for evaluation.

Please see Attachment 8 for a summary of parameters in the effluent from Internal Outfalls 101 and 201 above quantifiable levels.

b) <u>Mixing Zones and Wasteload Allocations (WLAs)</u>:

Wasteload allocations (WLAs) are ealculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

	WLA	$= C_0 [Q_c + (f)(Q_s)] - [(C_s)(f)(Q_s)]$
		Qe
Where:	WLA	= Wasteload allocation
	C_{\circ}	= In-stream water quality criteria
	Q_e	= Design flow
	Q_{s}	= Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
	f	= Decimal fraction of critical flow
	C_s	= Mean background concentration of parameter in the receiving stream.

The water segments receiving discharge via Internal Outfalls 101 and 201 are considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there are no mixing zones and the WLAs are equal to the C₀₀

c) Effluent Limitations Toxic Pollutants, Internal Outfalls 101 and 201:

9VAC25-31-220.D. requires limits he imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

Effluent limit evaluations are provided in Attachment 9. Since the flow from both internal outfalls is intermittent, toxic limits were evaluated using acute wasteload allocations only.

1) Ammonia as N:

This is an industrial storm water discharge and ammonia based products are not utilized or stored at this facility. It is staff's best professional judgment that ammonia is not present and hence, not a pollutant of concern.

2) Total Residual Chlorine (TRC):

Chlorine is used for disinfection of the drinking water supply and hence, and has the potential to be present in the discharge from Internal Ontfall 101. The permit limits of 0.011 mg/L monthly average and 0.0011 mg/L maximum found in this permit reissnance were derived from the General Permit for Potable Water Treatment Plants (9 VAC 25-860).

3) Metals:

Of the parameters found from the sampling of Internal Outfalls 101 and 201, only copper, cyanide, and zinc have designated acute criteria in the Virginia Water Quality Standards.

Limits for copper and cyanide were calculated at Internal Ontfall 101 and limits for copper and zinc were calculated at Internal Outfall 201 using acute wasteload allocations. Data used to calculate metals limits for Internal Outfall 201 was collected during a dry weather period (i.c., at least 48 hours after a storm event greater than 0.1 inches).

Monthly average and daily maximum limits of $20~\mu g/L$ were found to be needed at Internal Outfall 101 for copper, and monthly average and daily maximum limits of 39 $\mu g/L$ were found to be needed for Outfall 201. Limits for cyanide and zinc were not required at Internal Outfall 101 and 201, respectively. See Attachment 9 for derivation of the limits.

4) <u>TPH</u>

The General Permit for Discharges from Petroleum Contaminated Sites, Groundwater Remediation and Hydrostatic Tests (9 VAC 25-120) sets forth a technology-based limit of 15 mg/L for TPH. This limit is applicable for discharges where the contamination is from petroleum products other than gasoline. It is based on the ability of simple oilwater separator technology to recover free product from water. Wastewater that is discharged without a visible sheen is generally expected to meet this effluent limitation. DEQ has used this limitation for many individual permits for many years and monitoring data has demonstrated that it is readily achievable. Mass limits are not applicable to this type of pollutant and discharge and are not required.

A technology-based limitation and monitoring requirement for TPH of 15 mg/L at Internal Outfall 201 is applicable to this facility.

d) <u>Effluent Limitations and Monitoring, Internal Outfalls 101 and 201 – Conventional Pollutants</u>
No changes to total suspended solids (TSS) and pH limitations are proposed at either outfall.

The limits for TSS and pH at Internal Outfall 101 are based on the General Permit for Potable Water Treatment Plants (9 VAC 25-860).

pH limitations at Internal Outfall 201 are set at the water quality criteria.

e) <u>Effluent Limitations, Outfalls 001 and 002 – Storm Water Only Pollutants.</u> VA-DEQ Guidance Memo 96-001 recommends that chemical water quality

VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the inethodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, screening (i.e., decision) criteria have been established at 2 times the acute criteria. The 2 times factor is derived from acute criteria being defined as one half of the final acute value (FAV) for a specific toxic pollutant. The term FAV is an estimate of the concentration of the toxicant corresponding to a cumulative probability of 0.05 for the acute toxicity values for all genera for which acceptable acute tests have been conducted with the toxicant. These criteria represent maximum pollutant concentration values, which when exceeded, could cause acute effects on aquatic life in a short time period. These criteria are applied solely to identify those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP). Any storm water outfall data (pollutant specific) submitted by the permittee that were above the established endpoint levels require monitoring in Part I.A. of the permit for that specific outfall and pollutant. Derivation of the decision criteria and a comparison of the monitoring end-points and effluent data for this outfall are provided in Attachment 10.

Should annual storm water data exceed monitoring end points shown in Tables 3 and 4 below, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

	E3 Outfall 001 R Monitoring Concentration Values
Parameter	Maximum Limitation
Flow	NL (MGD)
Total Suspended Solids (TSS)	100 (mg/L)
Total Recoverable Copper	40 μg/L
Cyanide	44 μg/L
Total Recoverable Zinc	340 μg/L

· · · · · · · · · · · · · · · · · · ·	E 4 Outfall 002 k Monitoring Concentration Values
Parameter	Maximum Limitation
Flow	NL (MGD)
Total Suspended Solids (TSS)	70 (mg/L)
Total Recoverable Copper	78 μg/L
Total Recoverable Zinc	620 μg/L

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following tables. Limits and monitoring were established for flow, pH, temperature, and TSS at Outfalls 001 and 002.

A temperature limit has been placed on Outfall 002 due to the influence of heated wastestreams within the drainage area (e.g., non-contact cooling water). pH limits have been placed on Outfalls 001 and 002 to ensure that water quality standards in the receiving streams are maintained.

TSS monitoring has been placed in Outfalls 001 and 002 of the permit because TSS is a Sector AD (other storm water discharges designated by the board as needing a permit and not associated with other described industrial activity) storm water pollutant and a sediment TMDL for the Goose Creek Watershed present on the east side of the property affects the discharge from Outfall 002.

Limits have been placed on internal wastestreams to ensure proper operation of the treatment systems, to prevent the benefit of instream dilution, and to prevent the use of the receiving streams as additional treatment.

Sample Type and Frequency are in accordance with the VPDES Permit Manual and the General Permit for Potable Water Treatment Plants (9 VAC 25-860).

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 CFR 122.44. The temperature limit of 31°C maximum has been removed from Outfall 001. The limit was applied incorrectly. There is no a potential for this discharge to affect instream temperature.

TABLE 5 — Effluent Limitations/Monitoring Requirements for Outfall 001^a, b
(Western Portion of Facility)

Average flow from this industrial outfall is 0.19 MGD

19.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR	D	ISCHARGE :	LIMITATIO	NS	MONIT	
PARAMETER	LIMITS	Monthly Average	<u>Daily</u> Maximum	Minimum	Maximum	Frequency	Sample Type -
Flow (MGD)	NA	NL	NA	NA	NL	1/Q ^f	Estimate
pH (Standard Units)	1	NA	NA	6.5	9.5	1/Q ^f	Grab
TSS (mg/L)	3	NA	NA	NA	NL®	1/Q ^f	Grab
Total Recoverable Copper (µg/L)	1	NA	NA	NA	NLg	1/Y ^h	Grab
Cyanide (µg/L)	1	NA	NA	NA	NLg	1/Y ^b	Grab
Total Recoverable Zinc (µg/L)	1	NA	NA	NA	NLg	1/Yh	Grab

TABLE 6 -- Effluent Limitations/Monitoring Requirements for Outfall 101**

Water Breatment Plant Wastewater

Average flow from this industrial outfall is 0.08 MGD

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS	BASIS DISCHARGE LIMITATIONS FOR					MONITORING REQUIREMENTS	
TARAMETER	LIMITS	Monthly Average	<u>Daily</u> <u>Maximum</u>	Minimum	Maximum	Frequency	Sample Type	
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate	
TSS (mg/L)	1, 2	30 mg/L	60 mg/L	NA	NA	1/M	5G/8HC	
pH (S.U.)	1, 2	NA	NA	6.5 S.U.	9.5 S.U.	1/M	Grab	
Total Residual Chlorine (mg/L)	1, 2	0.011 mg/L	0.011 mg/L	NA	NA	1/M	Grab	
Total Recoverable Copper (μg/L) ^e	1	NA	NA	NA	20 μg/L	1/Q ^f	Grab	
Total Hardness	3	NA	NL	NA	NA	1/Q ^f	Grab	
Acute Toxicity C. dubia (TU _a)	NA	NA	NA	NA	NL	Per Permit (Part I.D)	Grab	
Acute Toxicity P. promelas (TU _n)	NA	NA	NA	NA	NL	Per Permit (Part I.D)	Grab	

TABLE 7 — Effluent Limitations/Monitoring Requirements for Outfall 002*b (Drainage from Bastern Portion of Facility)

Average flow from this industrial outfall is 0,051 MGD

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS DISCHARGE LIMITATIONS FOR					MONITORING REQUIREMENTS	
TAKAMETEK	LIMITS	Monthly Average	<u>Daily</u> <u>Maximum</u>	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/Qf	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	I/Q ^f	Grab
Temperature (degrees Celsius)	1	NA	NA	NA	31	1/Q ^f	Immersion Stabilization
TSS (mg/L, kg/mo)	3, 4	NA	NA	NA	NL ⁸	1/Q ^f	Grab
Total Recoverable Copper (µg/L)	1	NA	NA	NA	NL^g	1/Yh	Grab
Total Recoverable Zinc (µg/L)	1	NA	NA	NA	NLg	1/Yh	Grab

TABLE 8 – Effluent Limitations/Monitoring Requirements for Outfall 201^{a, c} (Sump and Cooling Water)

Average flow from this industrial outfall is 0.10 MGD

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR	20.00		GE LIMITAT	MONITORING REQUIREMENTS		
	LIMITS	Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
oH (Standard Units)	1	NA	NA	6.0	9.0	I/M	Grab
TPH (mg/L) ^d	3,5	NA	NA	NA	15	1/M	Grab
Total Recoverable Coppere	1	NA	NA	NA	39 μg/L	1/Q ^f	Grab
l'otal Hardness	3	NA	NL	NA	NA	1/Qf	Grab
Acute Toxicity C. dubia (TU _k)	NA	NA	NA	NA	NL	Per Permit (Part I. D)	Grab
Acute Toxicity P. promelas (TU _n)	NA	NA	NA	NA	NL	Per Permit (Part LD)	Grab

*BASIS FOR LIMITS KEY

Virginia Water Quality Standards (1/06/2011).

General Permit for Potable Water Treatment Plants (9 VAC 25-860)

Best Professional Judgment.

Sediment TMDL for the Goose Creek Watershed

9 VAC 25-120.

NL - No limitation, Monitoring required

NA - Not Applicable

1/Q - Once per quarter 1/M - Once per month

1/Y - Once per year.

Estimate - Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab - An individual sample collected in less than 15 minutes.

5G/8H-C Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

Immersion Stabilization - A calibrated device is immersed in the effluent stream until the temperature reading is stabilized.

- a. All effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- b. All samples from Outfalls 001 and 002 shall be collected from the discharge resulting from a storm event.
- c. All samples from Internal Outfalls 101 and 201 shall be collected during "dry periods" (at least 72 hours after a measurable storm event).
- d. Total Petroleum Hydrocarbons (TPH) is the sum of individual gasoline range organics and diesel range organics or TPH-GRO and TPH-DRO to be measured by EPA SW 846 Methods 8015C (2007) for gasoline and diesel range organics, or by EPA SW 846 Methods 8260B and 8270D. If the combination of Methods 8260B and 8270D is used, the lab must report the total of gasoline range organics, diesel range organics and polynuclear aromatic hydrocarbons.
- e. See Part LC, of the permit for the Schedule of Compliance.
- f. The quarterly monitoring periods shall be January through March, April through June, July through September, and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period
- g. See Part I.F.7 of the permit for monitoring end-points.
- h. The annual monitoring period shall be January 1 December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (January 10).

20. Other Permit Requirements:

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.
- b) Part I.C. of the permit details the requirements for a Schedule of Compliance.

The VPDES Permit Regulation, 9VAC25-31-250 allows use of Compliance Schedules to allow facilities sufficient time for upgrades to meet newly established effluent limits. The permit contains newly established limits for copper at Internal Outfalls 101 and 201. Since the facility was not designed to meet these limits, a schedule of compliance is required to provide the permittee time for facility upgrade. The permittee shall achieve compliance with the final limits specified in Part I.A. of the VPDES permit in accordance with the following schedule as contained in Part I.C. of the permit:

Action	Time Frame
Submit proposed plan to achieve compliance with the final limits.	Within 180 days after the effective date of the permit.
2. Report progress on attainment of final limits.	Annual reports are due on January 10 of each year.
3. Achieve compliance with final limits.	Within 4 years from the effective date of the permit.

Permit Section Part I.D., details the requirements for Whole Effluent Toxicity requirements
The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.I,
requires limitations in the permit to provide for and assure compliance with all applicable requirements
of the State Water Control Law and the Clean Water Act. Whole Effluent Toxicity (WET)
requirements are imposed for municipal facilities having a design flow >1.0 MGD, an approved
pretreatment program, or a requirement to develop a pretreatment program. Additionally, any facility
that is determined by the Board based on effluent variability, compliance history, instream waste
concentration, and receiving stream characteristics to need a Toxics Management Program (TMP) will
be required to develop one.

The FEMA facility has industrial dischargers with the potential to cause toxicity in the receiving stream. In accordance with 9 VAC 25-31-220.D.1.b, the potential is based on the unknown nature of the discharge, chemicals used on site, water quality data collected from the outfalls, and the high concentration of the effluent in the receiving stream (100%).

All discharges are intermittent in nature (see Table 1). In accordance with DEQ TMP guidance, acute testing using both an invertebrate and vertebrate species will be required at Internal Outfalls 101 and 201. Annual sampling is to be conducted during "dry periods" (at least 48 hours after a significant rain event of 0.1 inches or greater). Since the instream waste concentration is 100%, NOAEC will be used to determine acute toxicity.

d) Permit Section Part I.E. details the requirements of a Storm Water Management Plan.

In addition to the monitoring requirements in Part I.A of this permit, this facility must conduct quarterly visual monitoring during rainfall events. The SWPPP requirements are derived from the VPDES General Permit for discharges of storm water associated with industrial activity (9 VAC 25-151-1- et seq.).

21. Other Special Conditions:

a) O&M Manual Requirement. Required by the VPDES Permit Regulation, 9VAC25-31-190.E. Within 90 days of the effective date of this permit (January 17, 2012), the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be decimed a violation of the permit.

b) Notification Levels

The permittee shall notify the Department as soon as they know or have reason to believe:

- 1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (a) One hundred micrograms per liter;
 - (b) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (c) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (d) The level established by the Board.
- 2. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (a) Five hundred micrograms per liter;
 - (b) One milligram per liter for antimony;
 - (c) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (d) The level established by the Board.
- c) <u>Materials Handling/Storage</u>. 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.
- d) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems or the attainment of water quality goals according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the effluent from Outfalls 001, 002, 101, and 201 for the substances noted in Attachment A of this VPDES permit within two years of the permit expiration date and submit Attachment A and analytical data with the permit application for reissuance.

- e) Non-Contact Cooling Water Additives. Chemical additives may be toxic or otherwise violate the receiving stream water quality standards. The permittee shall notify DEQ-NRO in writing at least 30 days before use of chemical additives in the non-contact cooling water. Should the use of chemical additives significantly alter the characteristics of the non-contact cooling water discharge or the use of chemical additives becomes persistent or continuous, this permit may be modified or alternatively, revoked and reissued to include appropriate limitations and conditions.
- f) No Discharge of Detergents, Surfactants, or Solvents to the Oil/Water Separators. This special condition is necessary to ensure that the oil/water separators' performance is not impacted by compounds designed to emulsify oil. Detergents, surfactants, and some other solvents will prohibit oil recovery by physical means.
- g) <u>Storm Water Monitoring.</u> This special condition establishes storm water monitoring end points. The permittee is required to reexamine the effectiveness of the SWPPP and BMPs if water monitoring results exceed the monitoring end-point for a given parameter.
- h) <u>TMDL Reopener</u>: This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.
- 22. <u>Permit Section Part II</u>. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing

23. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1) The Water Quality Criteria Reopener Special Conditions has been removed from this permit.
 - 2) The Water Treatment Plant Lagoon Liner Special Condition has been removed from this permit.
 - 3) The Submittal of Form 2C Special Condition has been removed from this permit,
 - 4) The No Discharge of Detergents, Surfactants, or Solvents to the Oil/Water Separators special condition has been added to this permit.
- b) Monitoring and Effluent Limitations:
 - 1) The WET monitoring locations have been moved from Outfalls 001 and 002 to internal outfalls 101 and 201.
 - 2) The TRC permit limits at Internal Outfall 101 have been changed from 0.019 monthly average and daily maximum to 0.011 monthly average and daily maximum to reflect the values in the General Permit for Potable Water Treatment Plants (9 VAC 25-860).
 - 3) Monitoring of Storm Water Benchmark Monitoring Concentrations for TSS, Total Recoverable Copper, Cyanide, and Total Recoverable Zinc at Outfall 001 has been added.
 - 4) Monitoring of Storm Water Benchmark Monitoring Concentrations for TSS, Total Recoverable Copper, and Total Recoverable Zinc at Outfall 002 has heen added.
 - 5) Total recoverable copper limits of 20 μg/L and 39 μg/L maximum for Internal Outfalls 101 and 201, respectively and a compliance schedule has been added.
 - 6) Hardness monitoring has been added at Internal Outfalls 101 and 201.
 - 7) The temperature limit of 31°C maximum has been removed from Outfall 001.
 - 8) The sample type for TSS at Internal Outfall 101 has been changed from grab to 5G/8HC.
- c) Other:
 - 1) The Industrial Rating Worksheet score for Outfall 002 has changed from 25 to 55 because pH was not used as a limit based upon water quality.

24. Variances/Alternate Limits or Conditions: None

25. Public Notice Information:

The Loudoun Times Mirror First Public Notice Date:

The Clarke Times-Courier

9/14/2011

Second Public Notice

Date:

The Loudoun Times Mirror

The Clarke Times-Courier

9/21/2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3837, anna.westernik@deq.virginia.gov. Sec Attachment 11 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEO may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

Outfall 001

Discharge from Reservoir Hollow flows to the Shenandoah River. The 2010 Integrated Assessment reports that in the vicinity of Monitoring station IBSHN022.63, approximately 5.26 rivermiles downstream of the discharge, observed effects of mercury in fish tissue are present, PCBs are present in fish tissue, and there is observed effect for aquatic life due to abnormal fish histology. EPA and the State Water Control Board approved the PCB TMDL for this segment of the Shenandoah River October 1, 2001 and March 23, 2004, respectively. Storm water sampling conducted at this facility on June 23, 2004 showed that PCBs were not present in the discharge from the proposed Outfall 001.

Outfall 002

The discharge from Jefferies Branch, UT flows into Goose Creek via Jefferies Branch and Panther Creek. Goose Creek is listed for bacteria and benthic impairment in the approved 2010 Virginia Water Quality Assessment Integrated Report based on sampling conducted at Monitoring Station 1aGOO30.75, located approximately 10.9 rivermiles downstream of Outfall 002. Fish consumption use is impaired due to the presence of PCBs in Goose Creek.

EPA and the State Water Control Board approved a bacteria TMDL for this segment of Goose Creek on March 1, 2003 and June 17, 2004, respectively. The sediment TMDL for this segment of Goose Creek was approved by EPA and the State Water Control Board on April 26, 2004 and August 31, 2004, respectively. The PCB TMDL is due to EPA in 2018.

27. Additional Comments:

Previous Board Action(s): None

Staff Comments: None.

Public Comment: No written comments were received during the public notice period.

EPA Checklist: The checklist can be found in Attachment 12.

List of Attachments

Attachment 1	NPDES Industrial Rating Worksheets
Attachment 2	Facility Schematic
Attachment 3	Topographic map 216C (Ashby Gap)
Attachment 4	Material Storage Summary
Attachment 5	Site Visit Memorandum Dated May 11, 2011
Attachment 6	Planning Statement Dated May 7, 2011
Attachment 7	Water Quality Criteria and Wasteload Allocations for Toxic Materials
Attachment 8	Summary of Parameters in the Effluent from Internal Outfalls 101 and 201
Attachment 9	Effluent Limit Evaluations
Attachment 10	Storm Water Benchmark Concentration Values
Attachment 11	Public Notice

Attachment 12

EPA Checklist

							X	Hegular Addition		
							'	Discretionary Ad	dition	
VPD	ES NO. : _\	/A00914	64				:	Score change, b	ut no status Char	nge
							1	Deletion		
Facili	,		dustrial (Ου	tfall 001)						
City		Clarke Co								
Receivir	ng Water: _F	Reservoir	r Holl o w							·
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	ity a steam elec e following chara			i1) with one	or Is this p	ermit for a mur ion greater tha		separate storm 000?	sewer serving a	
1. Power out	put 500 MW or gr	eater (not us	sing a cooling po	ond/lake)	 	; score is 700 (stop i	nere)		
2. A nuclear	power Plant				X NO;	(continue)		•		
3. Cooling water	ater discharge gre	eater than 25	6% of the receiv	ing stream's 7	Q10					
Yes; so	core is 600 (sto	p here)	X NO; (cont	inue)						
			FAC	CTOR 1: 1	Toxic Pollut	ant Potenti	al			
PCS SIC C	Code:		Primary Sic	Code:	9229	Other Sic Code	es:	4941		
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	ee Instructions)	,	Code		(see I	nstructions)		Receiving	Stream Low Flow	-
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	Flow > 50 MG	ט [14	30				> 50%	₩	20
Type II:	Flow < 1 MGE) [X 21	10	ר	ype II:		< 10 %	51	0
	Flow 1 to 5 M	GD	22	20			1	0 % to < 50 %	52	20
	Flow > 5 to 10	MGD	23	30				> 50 %	53	30
	Flow > 10 MG	iD [24	50						
Type III:	Flow < 1 MGC		31	0						
	Flow 1 to 5 M	GD	32	10						
	Flow > 5 to 10	MGD	33	20						
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							-		oints Factor 2:	10

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (a	hack one)		BOD	, [7 cc	יטי	\Box	ther:			
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B. Total Suspended Solids (TSS)											
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			to 1000 l			2		5			
		> 100	0 to 5000) lbs/day		3		15			**
		. >	5000 lbs.	/day		4		20			
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					Points:	Scored:					0
C. Nitrogen Pollutants: (check one)			Ammo	nia 🗌	Other:						
Permit Limits: (check one)		Nitro	gen Equ	iivalent	(Code		Points			
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			0 to 3000			3		15			
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NO; (If no, go to Factor 5)		·									
Determine the Human Health	potential from to use the	om App	endix A.	Use the s	same SIC	doe and	subcate	gory ref	erence as	in Factor	1.
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FACTOR 5: Water Quality Factors

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		120		•			10						
		NO .		2			0						
3. Is the receiv	ving water in	compliance with	applicable	water qu	Jality sta	andards for	pollutant:	s that are v	vater q	uality lim	ited in ti	ne permit	7
				Code			Points						
	X	YES		1			a						
		NO		2			5						
C. Does the el toxicity?	ffluent discha	rged from this fa	cility exhibi	it the rea	sonabie	potential t	o violate v	vater quali	ty stand	dards due	e to who	ole effluer	nt
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Pointe Factor 6:

SCORE SUMMARY

1 Toxic Pollutant Potential 35 2 Flows / Streamflow Volume 10 3 Conventional Pollutants 0 4 Public Health Impacts 15 5 Water Quality Factors 10 6 Proximity to Near Coastal Waters 0 TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: Permit Reviewer's Name: Phone Number: 703-583-3837 Date: April 26, 2011	Factor	<u>Description</u>		Total Points
3 Conventional Poliutants 0 4 Public Health Impacts 15 5 Water Quality Factors 10 6 Proximity to Near Coastal Waters 0 TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik 703-583-3837	1	Toxic Poliutant Potential		35
4 Public Health Impacts 15 5 Water Quality Factors 10 6 Proximity to Near Coastal Waters 0 TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	2	Flows / Streamflow Volume		10
5 Water Quality Factors 1 10 6 Proximity to Near Coastal Waters 0 TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	3	Conventional Pollutants		0
Fermit Reviewer's Name: Anna Westernik Proximity to Near Coastal Waters 0 TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO	4	Public Health Impacts	•	15
TOTAL (Factors 1 through 6) 70 S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	5	Water Quality Factors		10
S1. Is the total score equal to or grater than 80 YES; (Facility is a Major) X NO S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	6	Proximity to Near Coastal Waters	•	0
S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837		TOTAL (Factors 1 through 6)		70
S2. If the answer to the above questions is no, would you like this facility to be discretionary major? X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	S1. Is the total score equal to or grater than 80	YES; (Facility is a Major)	X NC)
X NO YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	, -			
YES; (Add 500 points to the above score and provide reason below: Reason: NEW SCORE: 70 OLD SCORE: 70 Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837	oz. If the answer to the above questions is no, we	idid you like this facility to be discretionary ma	IJOI :	
NEW SCORE :	x NO			
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NEW SCORE : 70 OLD SCORE : 70 Permit Reviewer's Name : Anna Westernik Phone Number: 703-583-3837		and provide reason below:		
OLD SCORE : 70 Permit Reviewer's Name : Anna Westernik Phone Number: 703-583-3837	Heason:			
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Permit Reviewer's Name: Anna Westernik Phone Number: 703-583-3837				
Phone Number: 703-583-3837	OLD SCORE. 70			
Phone Number: 703-583-3837				
		Permit Reviewer's N	lame :	Anna Westernik
Date: April 26, 2011		Phone Nu	ımber:	703-583-3837
			Date:	April 26, 2011

									Regular Additio	ก	
									Discretionary A	ddition	
VPI	DES NO. : _	VA009	1464					X	Score change, i	out no status Char	nge
									Deletion		
	lity Name: _				fall 002)						
•	/ / County: _										
	ing Water: _	<u>Jefferie</u>	s Bran	<u>ch, UT</u>					······································		
Reach	n Number: _										
more of the 1. Power ou 2. A nuclear 3. Cooling value flow rate	lity a steam ele te following cha trout 500 MW or g r power Plant valer discharge g score is 600 (ste	racteristic greater (not reater than	es? t using a c	collng por	id/lake) g stream's 70	popul X N	s permit for a mu lation greater the ES; score is 700 D; (continue)	an 10	0,000?	n sewer serving a	
				FAC	TOR 1: T	oxic Poli	utant Potent	ial			
PCS SIC	Code:	,	— Prim	ary Sic C	ode:	9229	Other Sic Coc	ies.	4961	4959	
Industrial	Subcategory C	ode: 0	000		(Code 00	00 if no subc	ategory)				
0-1	. dha Tarriala ar	-44-1	6			the TOT		time an			
	-						=	iai cc	lumn and check		Daluta
Taxicity No pro				10	oxicity Grau	•	Points		Toxicity Grou	•	Points
	streams C) ()		3.	3	15		7.	7	35
X 1.	1	1 5	5		4.	4	20		8.	8	40
2.	2	2 1	0		5.	. 5	25		9.	9	45
					,						
				L	6.	6	30		10.	10	50
									Code Numbe	r Checked:	1
									Total Points		5
			(1				m Flow Volu ction B; check of		e)	***************************************	
	ction A - Wast		ow Only	considere	ed .					n Flow Considered	
	/astewater Type see Instructions		•	Code	Points		stewater Type Instructions)	F		Wastewater Concert Stream Low Flow	stration at
Type I:	Flow < 5 MG	-		11	0	,,,,,,				Code	Points
•	Flow 5 to 10			12	10		Type I/III:		< 10 %	41	0
	Flow > 10 to	50 MGD		13	20				10 % to < 50 %	42	10
	Flow > 50 MC	3D		14	30				> 50%	43	20
Type II:	Flow < 1 MGI	D	x	21	10		Type II:		< 10 %	51	0
. , , ,	Flow 1 to 5 M			22	20		7,6		10 % to < 50 %	52	20
	Flow > 5 to 1			23	30				> 50 %	53	30
	Flow > 10 MC			24	50						
Tues III.	Close a 4 MA	Б		21	0						
Type III:	Flow < 1 MG			31	0						
	Flow 1 to 5 M Flow > 5 to 1		}	32 33	10 20						
	Flow > 5 to 1		\vdash	34	20 30						
	LIOM > 10 WK	<i></i>	Ш	J-4	30					-	
								Co	de Checked from	Section A or B:	21
									Tot-1 5	lelete Footos Os	10

NPDES PERMIT RATING WORK SHEET

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants:	: (check one)	BOD [COD	Other:			
Permit Limits: (check one)			Code	e Poin	ts		
1 SAME ENVIRON (SILOUR SILO)		100 lbs/day	1	0			
	<u> </u>	to 1000 lbs/day	2	5			
		o 1000 ibs/day o to 3000 ibs/day		15			
		3000 lbs/day	4	20			
		0000 1004 4113	Code Number C				N/A
							0
			Points Scor	ea:			Ų
B. Total Suspended Solids (TSS)	•						
Permit Limits: (check one)			Code	e Poir	its		
	[X] <	100 lbs/day	1	0			
	}	to 1000 lbs/day	2	5			
	<u> </u>	0 to 5000 lbs/da		15			
		5000 lbs/day	y 3 4	20			
		5000 ibs/day	,		•		
			Code Number C				
			Points Scor	red:			0
C. Nitrogen Pollutants: (check one	e)	Ammonia	Other:				
Permit Limits: (check one)	Nitro	gen Equivalent	Code	e Poir	nts		
,	processor and the same of the	300 lbs/day	1	0			
		to 1000 lbs/day	2	5			
		0 to 3000 lbs/da		15			
•		3000 lbs/day	4	20			
	<u> </u>	0000 100000	•				A1/A
			Code Number C				N/A
			Points Sco	red:			0
			Total Points Fa	actor 3:			0
	FACTO	OR 4: Public	Health Impa	ct ·			
s there a public drinking water supp he receiving water is a tributary)? A	ly located within 50 r A public drinking wate	niles downstreat	m of the effluent o	discharge (this in	clude any body methods of co	of water nveyance	to which that
iltimately get water from the above i	reterence supply.						
YES; (If yes, check toxicity poter	ntial number below)						
NO; (If no, go to Fector 5)							
Determine the Human Heal (Be	ith potential from App sure to use the Hum	endix A. Use the	ne same SIC doe ty group column -	and subcategory	/ reference as i w)	n Factor 1	ł.
Toxicity Group Code Point		y Group Cod			city Group	Code	Points
T Na process							4 #
waste streams 0 0		3. 3	0		7.	7	15
1. 1 0		4. 4	0		8.	8	20
2. 2 0		5. 5	5		9.	9	25
		6. 6	10		10.	10	30
	-		Code Numbe	ar Checked			1
			Total Points				<u>, </u>
			TOTAL MOIDING	e eactor 4.			1.1

NPDES PERMIT RATING WORK SHEET

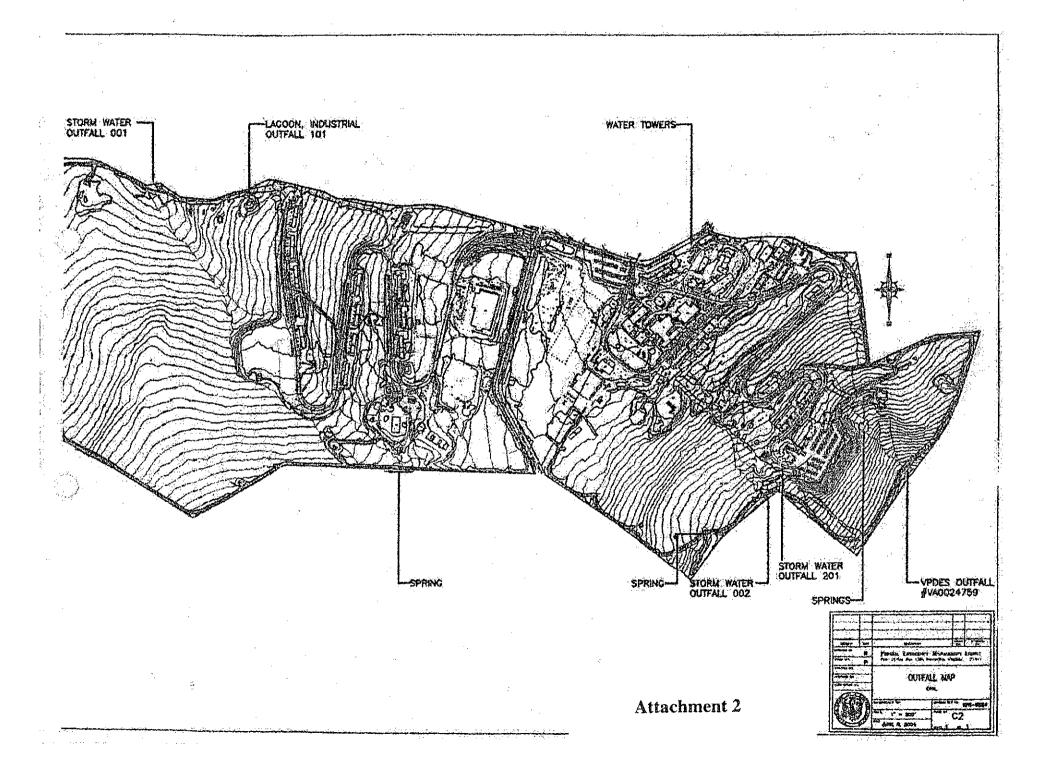
FACTOR 5: Water Quality Factors

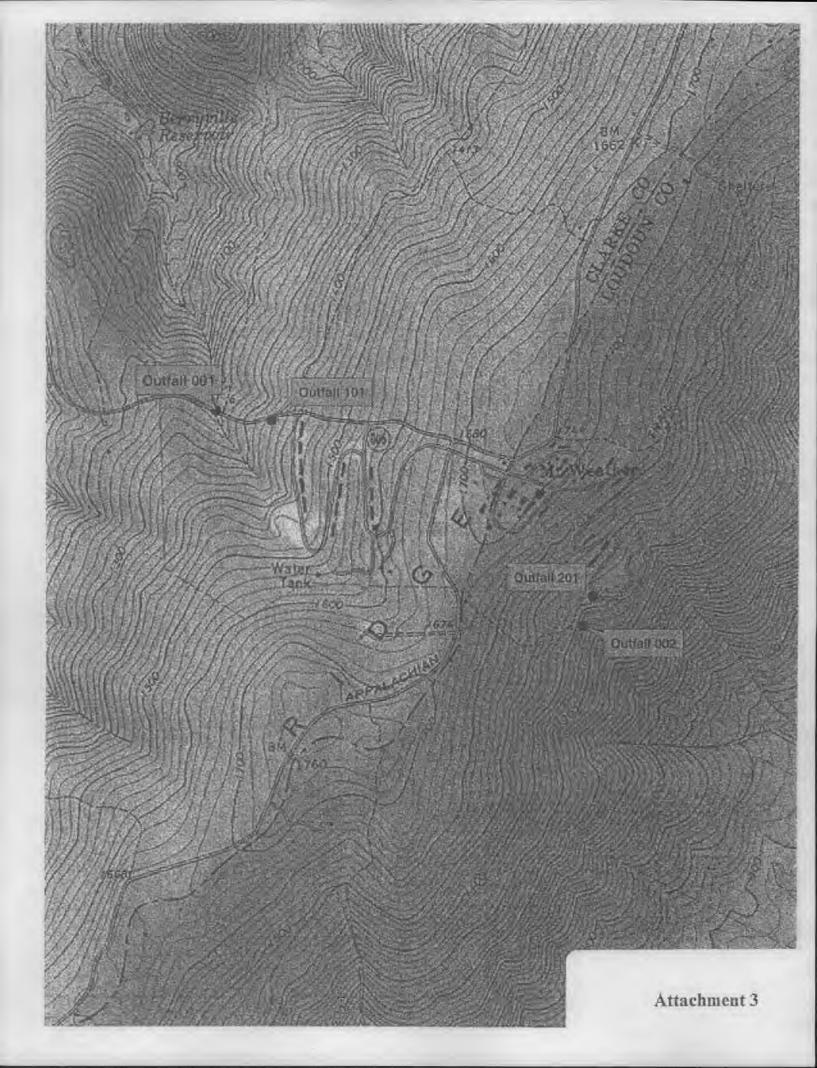
А.	Is (or will) one or m based federal efflue discharge?	ore of the effluent dischent guidelines or techno	arge limits based logy-based state	d on water effluent gi	quality factor uidelines) or r	rs of the re has a was	eceiving str steload alloc	eam (rather t cation been g	han technology given to the	-
			Code	e	P	oints				
		YES	1			10				
		X NO	2			0				
В.	Is the receiving wa	ter in compliance with a	pplicable water (quality star	adards for po	llutants tha	at are wate	r quality limit	ed in the permit	?
		·	Cod	е	P	oints				
		X YES	1			0				
		NO	2			5				
<i>C</i> .	Does the effluent of toxicity?	discharged from this fac	ility exhibit the re	asonable p	ootential to vi	iolate wate	er quality st	andards due	to whole efflue.	nt
			Cod	e	F	Points				
		YES	1			10				
		X NO	2			0				
		Code Number Check	red: A	1	В	1	С	2		
		Pointe Facto	r 5: A	0	- + B	0	+ c <u></u>	0 :	= 0	
A.	Rase Score: Enter	FACT	FOR 6: Proxidation ctor 2) 21	mity to i	Near Coas	stal Wate	ers			
Λ.		ate facility HPRI code (fi		 Enter	the multiplica	ation factor	r that corre	sponds to the	e flow code:	0.3
	HPRI		HPRI Score	2,113.	•	Flow Code			iplication Factor	r
	1	1	20			1, 31, or 4			0.00	
	Ш,	·				2, 32, or 4			0.05	
	2	2	0		1:	3, 33, or 4	3		0.10	
	<u></u>					14 or 34			0.15	
	3	3	30			21 or 51			0.10	
	_					22 or 52			0.30	
	X 4	4	0			23 or 53		-	0.60	
	5	5	20			24			1.00	
	HPRI code	checked: 4								
	Base Score (HF	PRI Score): 0	Х (Multiplicati	on Factor)	0.1	<u>1 </u>	0		
₿.	discharge to one of	NEP Program is an HPRI code of 3, di the estuaries enrolled i (NEP) program (see ins	n the National	C.	For a facility discharge a	y that has iny of the	an HPRI co pollutants c	Area of Cond ode of 5, doe of concern into instructions)	s the facility to one of the Gr	eat
	Cod	le Points					Code	Points		
	1	10					1	10		
	2	. 0					2	0		
		Code Number Chec	ked: A	4	В	N/A	c	N/A		
		Pointe Facto	or 6: A	0	+ B _	0	_ + C	0	= 0	_

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

<u>Factor</u>	Description	Total Points
1	Toxic Pollutant Potential	5
2	Flows / Streamflow Volume	10
3 .	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Ouality Factors	0
6	Proximity to Near Coestal Waters	0
·	TOTAL (Factors 1 through 6)	15
S1. Is the total score equal to or grater than 80	YES; (Facility is a Major)	0
S2. If the enswer to the above questions is no, wo NO YES; (Add 500 points to the above score Reason:	ould you like this facility to be discretionary major? and provide reason below:	
NEW SCORE :		
	Permit Reviewer's Name :	Anna Westernik
	Phone Number:	703-583-3837
	Date:	April 20, 2011





MATERIALS/CHEMICALS STORED ON-SITE

1. Stored Indoors/Under Roof

Water Treatment Plant - Storage area drains Wastewater Treatment Plant

- Polyaluminum Chloride
- Powdered Activated Carbon
- Sodium Permanganate
- Sodium Hexametaphosphate
- Chlorine gas
- Hydroxide Sulfate
- Calcium Hypochlorite

Wastewater Treatment Plant - Storage area drains back into the plant

- Chlorine gas
- Sulfur Dioxide gas

Warehouse

- Motor oil, stored in separate building with secondary containment, (6) 55-gallon drums
- Antifreeze, stored in separate building with secondary containment), (3) 55-gallon drums
- Solvent (mineral spirits), stored in separate building with secondary containment, (2) 55-gallon drums
- Fuel additives, stored in flammable storage locker, 2 gallons
- General household cleaners, numerous small containers (1 gallon or less)
- Compressed gas cylinders, 36 total
- Miscellaneous maintenance products: 10 gallons of floor stripper, 10 gallons of wall adhesive, 5 gallons floor wax, etc.

Vehicle/Equipment Maintenance Shops

- Motor oil, (6) 55-gallon drums
- Antifreeze, (3) 55-gallon drums
- Fuel additives, 1 gallon
- Misc. aerosol cleaners, fuel additives, brake fluid, etc. stored in (2) 60-gallon capacity flammable storage lockers
- Solvent (mineral spirits), (1) 55-gallon drum
- Grease, 120 pounds
- Lube oil, 1 55-gallon drum
- Hydraulic fluid, (1) 55-gallon drum
- Transmission fluid, (1) 55-gallon drum
- Kerosene, (1) 5-gallon container, stored in flammable storage locker
- Gasoline, (1) 5-gallon container, stored in flammable storage locker
- Used oil, (1) 55-gallon drum

<u>Pesticides</u>

- Misc. small quantities stored in locked building

Paint Shop

- Paints, stains, varnishing and solvents, etc. of varying quantity stored in flammable storage lockers and on shelving inside of two separate buildings (no floor drains to outside)

- Concrete Sealer, (1) 55-gallon drum
- Waste oil, (1) 55-gallon drum

A/C Shop

- Refrigeration oil, 2 gallons
- Waste refrigeration oil, 5 gallons
- Refrigerant, small quantities stored

Welding Shop

- Compressed gas cylinders, 10-15 cylinders

2. Stored Outdoors

Road Salt (stored in covered shed)
Above and below ground fuel storage tanks

May 11, 2011 MEMORANDUM

To:

File

From:

Anna Westernik, Water Permit Writer

Subject:

Summary of May 10, 2011 Visit to the FEMA Facility

FEMA is a federal government facility located on a mountain ridge on Route 601 near Bluemont, Virginia that has been in operation since the early 1900s. The facility encompasses administrative programs, training and housing facilities, and emergency and disaster relief support. FEMA has water and sewage treatment plants, a police force, and fire/rescue personnel on site. The facility population varies greatly throughout the year depending on surge requirements. However, there are approximately 1,200 people who work at the facility.

A site visit was made to the facility prior to the reissuance of the industrial permit by Susan Mackert and myself from DEQ to assess the status of operations. FEMA personnel present were Kathy Ellis, Environmental Engineer, and Peter Mango. The visit consisted of observation of discharge to Internal Outfalls 101 and 201 and Storm Water Outfalls 001 and 002. A description of these discharges follows:

Ontfall 001

Outfall 001 consists of storm water that drains the western portion of the facility and any discharge that would occur from the water treatment plant lagoon. The outfall receives storm water drainage from paved roads, oil storage areas (covered tanks), hazardous waste storage (covered metal buildings), road salt storage (covered shed), construction activities, and basement sump pump discharges. This outfall discharges into Reservoir Hollow above the abandoned reservoir for the Town of Berryville. Flow is measured at the sampling point near Route 605 with a v-notch wier. Reservoir Hollow exits the property at Route 605 in Clarke County

Outfall 101 (Water Treatment Plant)

The average potable water production from the Water Treatment Plant (WTP) is between 100,000 to 125,000 gpd. The plant uses numerous pump stations to draw raw water from the Shenandoah River through a flash mixer where a polymer based coagulant aid is added. Water then enters the flocculation and clarification basin where solids settle. The clarifier effluent enters two rapid sand filters prior to disinfection with chlorine gas in the clearwell. Sufficient chlorine is added to maintain a residual throughout the water distribution system. Sodium hexametaphosphate, a corrosion inhibitor, is added at the clearwell.

All backflush wastewater created by the WTP is discharged to a lagoon with a capacity of approximately 0.34 MGD (9' deep x 100' long x 50' wide) located about one-half mile west of the WTP. The WTP filters are backwashed monthly for 12 hours using clearwell water. The backwash process creates a maximum volume of approximately 22,100 gallons of wastcwater each week. Additionally, the floculation/clarification basin is drained and cleaned twice each year and discharged into the lagoon. The approximate volume of wastewater created by the cleaning of the basin during each occurrence is 270,000 gallons or 540,000 gallons/year.

Wastewater created by backwashing the filters and cleaning of the basin is discharged to a pipe under the WTP. The pipe runs approximately one-half mile west of the water treatment plant and

downhill from the plant. It enters one half of a lagoon that is lined with a synthetic material and stone. The remaining half of the lagoon accepts storm water runoff and is lined with clay. The storm water portion of the lagoon is open for discharge at all times and the other portion of the lagoon is valved off most of the time to increase detention time and settling. Discharge from the filter backwash basin portion of the lagoon enters a pipe and runs further downhill to intersect with an unnamed tributary of Reservoir Hollow 0.18 rivermiles east of Outfall 001. Sampling for Internal Outfall 101 occurs at a manhole near Route 605. The lagoon has been designed so that any overflow of storm water should go to a culvert and directly to Outfall 001 instead of the filter backwash basin.

Reservoir Hollow, UT and Reservoir Hollow, the receiving streams for Outfalls 101 and 001, respectively are fast flowing mountain streams with many riffles. Aquatic life was observed in the vicinity of Outfall 001.

Outfall 002

Outfall 002, which discharges to an unnamed tributary of Jeffries Branch where it exits the FEMA property, receives drainage from the eastern side of the property and sump and cooling water discharge. All discharge from Outfall 201 and storm water discharge from the drainage area south of Internal Outfall 201 travel through this outfall. On this date, excessive suds were observed in the receiving stream. Sampling is conducted at a culvert after the second pond for Outfall 201. Flow is estimated through collection of water in a measured container over a period of time.

Outfall 201 (Sump Discharge, Cooling Water Discharge, Storm Water)

Southwest of the east parking lot is a roadside discharge that receives sump pump discharges, condensate from air conditioning towers, and storm water from the main complex of buildings on the eastern side of the property (including the vehicle maintenance and fueling area). This discharge enters a series of two ponds for treatment by aeration and sedimentation. Additional treatment is provided by two wiers in the first pond that collect oil. Siphons remove the collected oil and grease for disposal. Used liquid oil is recycled and non-liquid oil products are disposed of as hazardous waste. Effluent from the ponds is piped under a road and discharged into an unnamed tributary of Jefferies Branch approximately 300 feet from the Outfall 002 discharge area. During this site visit, the water in the second pond was blue-gray and murky. Fish and some algae were present in the pond. DEQ recommended that installation of an oil/water separator may be more effective in treating this discharge. An oil/water separator has been installed at the motorpool to pretreat all wastewater that enters the sewage treatment plant from the motorpool.

Jefferies Branch, UT in the discharge area is a fast-flowing stream with many riffles, common in the Appalachian Mountain area.

To: Anna Westernik From: Katie Conaway

Date: May 7, 2011

Subject: Planning Statement for FEMA Industrial

Permit Number: VA0091464

Discharge Type: Industrial

Outfall 001

Discharge Flow, 0:24 MGD

Receiving Stream: Reservoir Hollow

Latitude / Longitude: 39/04/12" / 77/54/00

Stjeamcoder 18REFh Waterbody: VAV-858R

Water Quality Standards: Class W. Section 1, Special Standards*, pH 6.5 to 9.5.

Rivermiler 3.549

Drainage Areas 24 acres

Outfall 002

Discharge Flow: 0:10 MGD

Receiving Streams UT to Jeffries Branch

Latitude / Longituder: 39'03'35' /-12:53'03"

Streamcode: IAXEA

Waterbody: VAN A05R

Water Quality Standards: Class III, Section 9:

Rivermile: 000.61

Drainage Areas 22.8 acres

- 1. Is there monitoring data for the receiving stream?
 - If yes, please attach latest summary.
 - If no, where is the nearest downstream monitoring station.

Outfall 001: There is no monitoring data for the receiving stream (Reservoir Hollow).

The nearest downstream DEQ monitoring station is 1BSHN022.63, located on the Shenandoah River. Reservoir Hollow flows into the Shenandoah River. Station 1BSHN022.63 is located approximately 5.26 rivermiles downstream from Outfall 001 of VA0091464. The following is a summary of the monitoring data for Station 1BSHN022.63, as taken from the 2010 Integrated Assessment:

Class IV - Mountainous Zones Waters; Section 1

Special Standards: pH (6.5-9.5)

NWBD: PS85 - Shenandoah River-Dog Run

Monitoring Station(s) used for assessment:

1BSHN022.63 1BSHN-FC0B-FOSR

This assessment unit is fully supporting the oquatic life, wildlife and recreational uses. However, this assessment unit is listed as having abserved effects due to mercury in fish tissue. The Fish consumption use is not supporting based on the presence of PCB in fish tissue. This assessment unit is included in the EPA opproved Shenandaah River PCB TMDL. This assessment unit is also included in a Virginia Department of Health Fish Consumption Advisary.

This assessment unit is listed as having an abserved effect far aquatic life due to abnarmal fish histology (lesions) due to several years of fish mortality and disease observations.

This assessment unit was included in TMDL ID VAV-PCB / 00191

Initial Listing Date 1998 Impairment Size S1.10 Miles

Trend analysis was performed at station 1BSHN022.63 in the 2006 cycle. Na statistically significant trends were detected.

Outfall 002: There is no monitoring data for the receiving stream (Unnamed Tributary to Jeffries Branch).

The nearest downstream DEQ monitoring station is 1aGOO030.75, located on Goose Creek. The receiving stream is an Unnamed Tributary (XLA) that flows into another Unnamed Tributary (XCD), which flows into Jeffries Branch. Jeffries Branch flows into Panther Skin Creek, which is a tributary to Goose Creek. Station 1aGOO030.75 is located approximately 10.9 rivermiles downstream from Outfall 002 of VA0091464. The following is a summary of the monitoring data for Station 1aGOO030.75, as taken from the 2010 Integrated Assessment:

Class III, Section 9.

DEQ ambient water quality monitoring station 1oGOO030.7S, ot Raute 611. USGS gage station 0143700 and citizen manitaring station 1AGOO-10-SOS.

E. cali manitoring finds a bacterial impairment, resulting in on impaired clossification for the recreation use. This impairment is nested within the dawnstream completed bocteria TMDL for Gaose Creek. The data collected by the citizen manitaring graup indicate that a water quality issue may exist; however, the methodalogy and/or data quality has not been approved for such a determination. Citizen manitaring finds a medium probability of adverse conditions for bioto, and is noted by an observed effect for the aquatic life use, which is atherwise fully supporting. The wildlife use is cansidered fully supporting. The fish consumption use was not assessed.

- 2. Is the receiving stream on the current 303(d) list?
- No. Neither Reservoir Hollow nor the Unnamed Tributary to Jeffries Branch (XLA) is on the current 303(d) list.
 - If yes, what is the impairment?

N/A

- Has the TMDL been prepared?
 N/A
- If yes, what is the WLA for the discharge?

N/A

- If no, what is the schedule for the TMDL?

N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

Yes.

- If yes, what is the impairment?

Outfall 001:

Fish Consumption Use (PCBs): The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits Rock Bass, Sunfish Species, Smallmouth Bass, and Largemouth Bass consumption to no more than two meals per month. Carp, Channel Catfish and Sucker Species are listed under a "DO NOT EAT" advisory. The affected area of the Shenandoah River extends from the confluence of the North and South Forks of the Shenandoah River to the Virginia/West Virginia State Line.

Outfall 002:

Recreational Use (*E. coli* Bacteria): Sufficient excursions from the maximum *E. coli* bacteria criterion (10 of 27 samples - 37.0%) were recorded at DEQ's ambient water quality monitoring station (1aGOO030.7S) at the Route 611 crossing to assess this stream segment as not supporting the recreation use goal for the 2010 water quality assessment.

Aquatic Life Use (Benthic Macroinvertebrates): One of 2 biological monitoring events in 2008 at station 1aGOO002.38 (Route 7) resulted in a VSCI score which indicates an impaired macroinvertebrate community, as does the mean score of these two sampling events.

Fish Consumption Use (PCBs): The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected area includes the following tributaries between the Virginia/Maryland state line near the Route 340 bridge (Loudoun County) to the I-395 bridge in Arlington County (above the Woodrow Wilson Bridge): Goose Creek up to the Dulles Greenway Road Bridge, Broad Run up to the Route 625 bridge, Difficult Run up to the Route 7 bridge, and Pimmit Run up to the Route 309 bridge. Additionally, there were exceedances of the water quality criterion based tissue screening value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in American eel (2004, 2004) and smallmouth bass (2004).

- Has a TMDL been prepared?

Outfall 001:

Fish Consumption Use (PCBs): Yes. TMDL Approved October 1, 2001.

Outfall 002:

Recreation Use (E. coli Bacteria): Yes. Approved May 1, 2003; Modified October 30, 2006. Aquatic Life Use (Benthic Macroinvertebrates – Sediment): Yes. Approved April 26, 2004. Fish Consumption (PCBs): No.

- Will the TMDL include the receiving stream?

While none of the above mentioned TMDLs did, or will, specifically include the receiving streams, TMDLs consider all upstream point source dischargers during TMDL Development.

- Is there a WLA for the discharge?

Outfall 001:

PCB TMDL: No.

Outfall 002:

Bacteria TMDL: No (Industrial Facility, so not expected to discharge the pollutant of concern).

Benthic (Sediment) TMDL: This permit was issued after the TMDL was developed. Since this facility discharges stormwater from Outfall 002, it should have a WLA for sediment. The TMDL included a growth allocation for the future growth and expansion of point sources in the Goose Creek watershed. The WLA for this Outfall was calculated using procedures outlined in the TMDL Report on page 84. The WLA is 8.5 tons/year.

PCB TMDL: N/A, TMDL not developed.

- What is the schedule for the TMDL?

PCB TMDL Due 2018.

- 4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?
 - A. Goose Creek is listed with a PCB impairment. The Assessment/TMDL Staff has concluded that low-level PCB monitoring is not warranted for this facility, based upon the assigned Standard Industrial Classification code. Based upon this information, this facility is not expected to be a source of PCBs and will not be requested to monitor for low-level PCBs.
 - B. There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information on other individual VPDES permits or VA DEQ monitoring stations located within a 2 mile radius of the facility. In addition, please provide information on any drinking water intakes located within a 5 mile radius of the facility.

There are no DEQ monitoring stations within a 2 mile radius of this facility and its outfalls. The only other VPDES Permit within a 2 mile radius is the FEMA STP (VA00247S9). There are 2 drinking water intakes within a 5 mile radius of the facility – both are located on the Shenandoah River, upstream from where Reservoir Hollow flows into the Shenandoah River. The two intakes are:

- Town of Berryville Intake (-77.97525, 39.09901)
- Mt. Weather Intake (-77.9131, 39.10321)
- 6. Could you please calculate the drainage area at the outfall?

Outfall 001: 24.0 acres Outfall 002: 22.8 acres

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Attachment 7

Facility Name:

FEMA Industrial - Outfall 101

Permit No.: VA0091464

Receiving Stream:

Trout Present Y/N7 =

Early Life Stages Present Y/N? =

Jeffenes Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows	Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1010 (Annual) = 0 MG	D Annual - 1010 Mix =	100 %	Mean Hardness (as CaCO3) =	152 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) = 0 MG	D -7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) = 0 MG	D - 30Q10 Mix =	1.00 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	SU	1Q10 (Wet season) = 0 MG	D Wet Season - 1Q10 Mix =	1001%	90% Maximum pH =	SU
10% Maximum pH =	SU	30010 (Wet season) 0 MG	D +30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =		30Q5 = 0 MG	D		Discharge Flow =	0.08 MGD
Public Water Supply (PWS) Y/N? =	Y	Harmonic Mean = 0 MG	0			

Parameter	Background		Water Qua	ality Criteria			Wasteloa	d Allocations			Antidegrade	ation Baseline		A	ntidegradati	on Allocations			Most Limit	ing Allocation	is
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Aguis	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0		-	6.7E+02	9.9E+02	-	-	6.7E+02	9.9E+02	~	-	-	-	-	-	+	-	-	-	6.7E+02	9.9E+02
Acrolein	7.7 0	See	-	6.1E+00	9.3E+00	-	-	6.1E+00	9.3E+00	-	-	-	-	-	-	-	4	-	44.	6.1E+00	9.3E+00
Acrylonitrile ^C	0	-	92	5.1E-01	2.6E+00	100	-	5.1E-01	2.5E+00	-	44	-	April 1		4	-	-	-		5.1E-01	2,5E+00
Aldrin ^C Ammonia-N (mg/l)	0	3.0E+00	-	4.9E-04	5.0E-04	3.0E400	3	4.8E-04	5.0E-04	-	4	-	4	-	-	+	-	3.0E+00	-	4.9E-04	5.0E-04
(Yearly) Ammonia-N (mg/l)	0	5.84E+01	7.09E+00	-	-	5,8E+01	7.1E+00	149)	-	14	*	~	-	-	9	~	-	5.8E+01	7.1E+00		-
(High Flow)	0	5.84E+01	7.09E+00		7	5.8E+01	7.1E+00		-	**	-	-		-	-	-	-	5.8E+01	7.1E+00	-	-
Anthracene	Q	-	-	8.3E+03	4.0E+04	29	-	8.3E+03	4.0E+04	-	-		-	77	-	**	100	-	-	8.3E+03	4.0E+04
Antimony	THE PERSON	-	**	5.6E+00	6.4E+02	-	-	5.6E+00	6.4E+02	200	-	77	-	(=	-	7	-	-	-	5.6E+00	6.4E+02
Arsenic	0	3.4E+02	1.6E+02	1.0E+01	*	3,4E+02	1.5E+02	1.0E+01	-	+	=	-	-	-	-	-	-	3.45+02	1.5E+02	1.0E+01	-
Barium	0	-	**	2.0E+03	-	-	-	2.0E+03	-	-	-	-	-	-	4	-	-	-	-	2.0E+03	-
Benzene ^C	0	-	-	2.2E+01	5.1E+02	-	-	2.2E+01	5.1E+02	-	-	-	-	/	-	-	-	-	-	2.2E+01	5.1E+02
Berzidine ^d	0.0	-	- 44	8.6E-04	2,0E-03	-	=	8.6E-04	2.06-03	-	-	-		-	-	-	-	-	-	8.6E-04	2.0E-03
Benzo (a) anthracene [©]	9	-	-	3.8E-02	1.8E-01	-	- 2	3.8E-02	1.8E-01	141	-		-	-	**	-	-	-	ad	3.8E-02	1.8E-01
Benzo (b) fluoranthene ^C	0	-	**	3.8E-02	1.86-01	-	-	3.8E-02	1.8E-01	4	-	4.4	-	-	14	-	-	-	-	3.8E-02	1.8E-01
Benzo (k) fluoranthene ^C	Q Yes	-		3.8E-02	1.85-01	**	46	3.8E-02	1.8E-01	100	-	5	- 100	- 10	-	**	-	-	-	3.8E-02	1.8E-01
Benzo (a) pyrene ^c	0	-	46	3.8E-02	1.65-01	-	-	3.8E+02	1.8E-01	-	100		**	**	-	++	-	-	-	3.8E-02	1.8E-01
Bis2-Chloroethyl Ether ^C		-	-	3.0E-01	5.3E+00		No.	3.05-01	5:3E+00	+	-	-	-	-	0	ie		-	-	3.0E-01	5.3E+00
Bis2-Chlorolsopropyl Ether	0	140	-	1.4E+03	6.5E+04	77	-	1.4E+03	6.5E+04	-	**	**	-	-	**	-		-	-	1.4E+03	6.5E+04
Bis 2-Ethythexyl Pnthalate ^C	0	-	-	1.2E+01	2.2E+01	*	-	1.2E+01	2.2E+01	+	-	+	-	-				-	-	1.2E+01	2.2E+01
Bromolomi [©]	0.0	-	34.1	4.3E+01	1.4E+03	-	-	4.3E+01	1.4E+03	-		-		-	-	-	**	-	-	4.3E+01	1.4E+03
Bulylbenzylphthalate	0	-	-	1,5E+03	1.9E+03	-	797	1.5E+03	1.9E+03			-	2	-	-	100	-	-	-	1.5E+03	1.9E+03
Cadmium	0	6.3E+00	1.6E+00	5.0E+00	-	6.3E+00	1.6E+00	5.0E+00	-	-	-	-	-	-	-	-	-	6.3E+00	1.6E+00	5.0E+00	-
Carbon Tetrachloride C	0	-	-	2.3E+00	1.6E+01	-	-	2.3E+00	1.6E+01	-		-	-	-	-	-		-	-	2.3E+00	1.6E+01
Chlordana ^C	70	2.4E+00	4.3E-03	8.0E-03	8.1E-03	2.4E+00	4.3E-03	8.0E-03	B.1E-03	-	-	-	-	-	-	4	-	2.4E+00	4.3E-03	8.0E-03	8.1E-03
Chloride	0	8.66+05	2.3E+05	2.6E+06		8.8E+05	2.3E+05	2.5E+05	-	-	-	_	-	-	-	_	-	8.8E+05	2.3E+05	2.55+05	-
THC	0	1.9E+01	1.1E+UT	*	-	1.9E+01	1.1E+01			140	4		-		_	2	4.	1.9E+01	1.1E+01	_	-
Chlorobenzene	0	-	-	1.36+02	1.6E+03			1.3E+02	1.6E+03		-							1.00.701	(included	1,3E+02	1.6E+03

Parameter	Background		Water Qua	lity Criteria			Wasteload	Allocations			Antidograda	ation Baseline		A	intidegradati	on Allocations			Most Limiti	ng Allocation	
					101	Acute	1	HH (PWS)	HH	Acula	Chronic	HH (PWS)	HH	Active	Chronis	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Cincinc			Piodio	CHINGHI	and start			-	9	-	-	-	4.0E+00	1,3E+02
Chlorodibromomethane ^C	100	-	***	4.0E+00	1.3E+02	-	-	4.0E+00	1.3E+02						-	-	-	-	-	3,46+02	1.1E+04
Chlorolorm	0	-	**	3 4E+02	1.1E+04	-		3.45+02	1.1E+04				-		-	-	_	-	-	1.0E+03	1.6E+03
2-Chloronaphthalane	0 1	24	**	1.0E+03	1.6E+03	7		1.05+03	1.0E+03	-	-	_				-	-	-	-	8.1E+01	1.5E+09
2-Chiorophenol	0	-	-2	B.1E+01	1.5E+02	-	7.00.00	B.1E+01	1.6E+02	-		-						8.3E-02	4.1E-02	-	-
Chlorpyrilos	D	8.35-02	4.1E-02	-		8.3E-02	4.1E-02	**	**	-	-			-			-	8.0E+02	1.0E+02	_	-
Chromium III	P	8.0E+02	1.0E+02	-	-	8.0E+02	1.0E+02	-	-	- 20		-	**				-	1.6E+01	1.1E+01	-	0
Chromium VI	0	1.6E+01	1.1E+01	-	-	1.6E+01	1,1E+01	-	To.		-	-	**		-	_	-	1,02101	-	1.0E+02	-
Chromium, Total	0	-	100	1.0E+02	-	-	77	1.0E+02	-		-	-	-						-	3.8E-03	1.8E-02
Chrysene ^C	0		44	3.8E-03	1.8E-02		-	3.6E-03	1,8E-02	***	-		-		-			205+04	1.3E+01	1,3E+03	-
Copper	0 2 3	2.0E+01	1.3E+01	1.3E+03		2.0E+01	1.3E+01	1.3E+03	-	-	-	-	~	-	-	-		2.0E+01 2.2E+01	5.2E+00	1,45+02	1.6E+0
Cyanide, Free	9	2.2E+01	5.2E+00	1.4E+02	1.6E+04	2.2E+01	5.2E+00	1.4E+02	1.6E+04	-	**	-	-	-	~	-	*	2.2E+01	5.20-00	3.1E-03	3.1E-0
DOD C	0	-	-	3.1E-03	3.1E-03	-	-44	3.1E-03	3.1E-03	-	-	17	-		-	-	-			2.2E-03	2.2E-0
DDE C	0	-	**	2.2E-03	2.2E-03	-	104	2.2E-03	2.2E-03	-	-	-			**	*	-	-	4 05 00		2.2E-0
DDTC	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.1E+00	1.0E-03	2.2E-03	2.2E-03	-	-	-	*	-		-	-	1.1E+00	1.0E-03	2.2E-03	2.20-0.
Demeton	0	-	1.0E-01	-	-	**	1.0E-01		-	-	+	-	+6	-	**	~	**	-	1.0E-01	77	-
Diazinon	0	1.7E-01	1.7E-01	**	+	1.7E-01	1.7E-01	-	944	-	+	-	-	-	-	-	**	1.7E-01	1.7E-01	Same and	
Dibenz(a,h)anthracene C		-	-	3,8E-02	1.8E-01	-		3.8E-02	1.8E-01	-	-	+	-	-	-	-		-	-	3.8E-02	1.8E-0
1,2-Dichlorobenzene	0	-	-	4.2E+02	1.3E+03	1	-	4.2E+02	1.3E+03	-	-	-	-	-	-	-	7	-	-	4.2E+02	1.3E+0
1,3-Dichlorobenzane	a	-	44	3.2E+02	9 6E+02	-	+	3.2E+02	9,6E+02	-	-	-	-	44	-	-	~	-	-	3.2E+02	9.6E+0
1,4-Dichlorobanzene	. 0		-	6.3E+01	1.9E+02	-	-	6.3E+01	1.9E+02	-	-	-	-	-	-	-	7	-	-	6.3E+01	1.9E+0
3,3-Dichlorobenzidine ^C	0		-	2.1E-01	2.85-01	-	-	2.1E-01	2.8E-01	-	+	-	-	-	-	7	-	-	-	2.1E-01	2.8E-0
Dichlorobromomethane ^C	0		-	5.5E+00	1.7E+02	-	-	5.5E+00	1.7E+02	-	-	-	50		~	-	-	+	-	5.5E+00	1.7E+0
1,2-Dichloroethane C	0		-	3.8E+00	3.7E+02	100	(see	3.8E+00	3.7E+02	-	-	-	Fe	-	-	-	-	-	-	3.8E+00	3.7E+0
1,1-Dichloroethylene		-	-	3.3E+02	7.1E+03	-		3.3E+02	7.1E+03	1 2	-	-	-	-	Ade	-	-	-	-	3.3E+02	7.1E+0
1,2-trans-dichloroethylene	0		2	1.4E+02	1.0E+04	-	-	1.4E+02	1.0E+04	-	-	**		-	-	-	-	-	-	1,4E+02	1.0E+0
2,4-Dichlarophenol			-	7.7E+01	2.96+02			7.76+01	2.9E+02	-	-	-	-	-	-		-	-	-	7.7E+01	2.9E+0
2,4-Dichlerophenoxy					200					1		120		1 -		-	-	-	-	1.0E+02	-
acetic acid (2,4-D)	9,1	-	-	1.0E+02		-	**	1.0E+02										-	-	5.0E+00	1.5E+0
1,2-Dichloropropane	0	-	7	5,0E+00	1.5E+02	-	**	5.0E+00	1.5E+02	-	-					_	-	-	-	3.4E+00	2.15+0
1,3-Dichloropropene C	0	-	-	3.4E+00	2.1E+02	-	-	3.4E+00	2.1E+02	-	-	-						2.4E-01	5.6E-02	5.2E-04	5.4E-0
Dielarin ^C	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	2.4E-01	5.6E-02	5.2E-04	5.4E-04		-							-	-	1.7E+04	4.4E+0
Diethyl Phthalate	.0	-	-	1.7E+04	4:4E+04	-	-	1.7E+04	4.4E+04	-	-		-	1					-	3.8E+02	B.5E+0
2,4-Climethylphenol	0	-	46	3.8E+02	8.5E+02	-	-	3.8E+02	8.5E+02	-	-	-	-	1	-		-			2.7E+05	1.16+0
Dimethyl Phthalate	0	-	**	2.7E+05	1.1E+06	77	-	2.7E+05	1.1E+06	-	-	-	77		-					2.0E+03	4.5E+0
Di-n-Butyl Phihalate	0		**	2.0E+03	4.5E+03	-	77	2.0E+03	4.5E+03	-	-		-			-				6.9E+01	5.3E+
2,4 Dinitrophonol	-0.5	-	-	6.9E+01	5,3E+03	-	-	6.9E+01	5.3E+03	-	12.	-			**		-			1,36+01	2.85+
2-Methyl-4,6-Dinitrophenol	0	-	75	1.3E+01	2.8E+02	-	100	1.3E+01	2.8E+02	-	27	-	~	-	-	-	-		-	1,1E+00	3.4E+
2,4-Dinitratoluane C	000	340	**	1.1E+00	3.4E+01	-	401	1.1E+00	3.4E+01	-	-	Jan 1		-	-		-	-	-	THEFEO	2015
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dloxin			-	5.0E-08	6.1E-08	-	***	5.0E-08	5.1E-08	-	-	-	1980	-	-	-	#	-	-	5.0E-08	5.1E-0
1,2-Diphenylhydrazine ^C	0			3.66-01	2.0E+00		-	3.6E-01	2.0E+00			-		40	-	-		-	-	3.6E-01	2.0E+
	Karaman Salah	2.25-01	5.6E-02		B.9E+01	15. 35.00	5.6E-02				**	-		-	-	-	+	2.2E-01	5.6E-02	6.2E+01	8.9E+
Alpha-Endosulfan	9	2.2E-01	5.6E-02			1 (3)			8.9E+01			-	-	-	-	-	-	2.25-01	5.6E-02	5.2E+01	8.9E+
Beta-Endosullan		2				1 20 20 21			B.BETC1		-	-	-	-	-		=	2.2E-01	5.6E-02	-	-
Alpha + Beta Endosultan	0	2.2E-01	5.68-02		P.0E+04	2.28-01					-	1	3	-	*1	-	-	-	-	6.2E+01	8.9E+
Endosulfan Sulfate	0	0.00.00	9.05.05	6.2E+01		1	205.00	6.26+01	8.9E+01	1	- 2	-	-	1 -	-	-	4	8.6E-02	3.6E-02	5.9E-02	6.0E-0
Endrin	0	8.6E-02	3,6E-02	2.9E-01			2 3.65-02	5.9E-02 2.9E-01									4	1	_	2.9E-01	3.0E-0

Parameter	Background		Water Qua	ality Orteria	7	1	Wasteload	Allocations			Antidegrada	tion Baseline		A	ntidegradatio	n Allocations			Most Limit	ing Allocation	15
(ug/i unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute		HH (PWS)	HH	Acute	I	HH (PWS)	HH	Acute	Chronic I	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
	0010	POULE	CHICAGO		2.1E+03	- Alberto	Contract	5.3E+02	2.1E+03	-			84	-	-	-	-	-	-	5,3E+02	2.1E+03
Ethylbonzene	Lyman Mary			5,35+02			7	1.3E+02	1.4E+02			-		_		**	-	-	-	1.3E+02	1.4E+02
Fluorantoene	(Q)	-		1.35402	1.4E+02 5.3E+03			1.1E+03	5.3E+03			_	_		-	_	-	-	-	1.16+03	5.3E+03
Control of Control	A STATE OF THE STA			1.15+03	OUSCANO				OLUETOO						-	-	-	-	-	5.0E+02	_
Foaming Agents Guthion	0	-	1 05 00	5.0E+02	**	-	4.05.00	6.0E+02							-		-	-	1.0E-02		-
The second second	0	-	1.0E-02		-		1.0E-02	-	70507			_					-	5.2E-01	3.8E-03	7.9E-04	7.9E-04
Heptachlor ^G	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	5.2E-01	3.8E-03	7.9E-04	7.9E-04		-	-	-	1 3		-		5.2E-01	3.8E-03	3.95-04	3.9E-04
Heptachior Epoxide ^C	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	5.2E-01	3.8E-03	3.9E-04	3.9E-04	-	-	14	~	-	-	-	-	3.25-01	a.0E-9a		
Hexachlorobenzend	0.0	*	- 75	2.8E-03	2.9E+03	-	*	2.8E-03	2.9E-03	-		4	-	-		-	-	-	-	2.8E-03	2.9E-03
Hexachlorobutadiena ²	9	-	75	4.4E+00	1.86+02	-	-	4.4E+00	1.8E+02	144	- 1	-	**	-		-	177	-	-	4.4E+00	1.8E+02
Hexachlorocyclohaxane Alpha-BHC ^E				2.6E-02	4.9E-02			2.6E-02	4.9E-02	1	-	-	-		-	_	-	-	-	2.6E-02	4.9E-02
Hexachlorocyclohexane		-	-	S.0C-02	4.91.02	-	-	6,02-02	4.00.06					1							
Beta-BHC ^C	0	-	-	9.1E-02	1.7E-01	-	-	9.1E-02	1.7E-01	-	-	~	+	-	-	-	191	-	-	9.1E-02	1.7E-01
Hexachlorocyclohexane														10				1			
Gamma-BHC ^C (Lindane)	0	9.5E-01	-	9.8E-01	1.85+00	9.5E-01	-	9.8E-01	1.8E+00	-	-	-	-	-	-	1++	H	9.5E-01	-	9.8E-01	1.8E+00
Hexachiorocyclopentadiene	0	-	-	4.0E+01	1.1E+03	-	-	4.0E+01	1.1E+03	-	100	-	-	-	-	ie.	H	-	-	4.0E+01	1.1E+03
Hexachloroethane ^C	0.00	-72	-	1.4E+01	3.3E+01	-	0	1.4E+01	3.3E+01	-	-	+	40		-	-	~	-	-	1.4E+01	3.3E+01
Hydrogen Sulfide	0	-	2.0E+00	-	-	-	2.0E+00	-	-	2	-	-	-	-	-	-		-	2.0E+00	-	-
Indeno (1,2,3-cd) pyrene C	20 900	-	-1	3.8E-02	1.8E-01	-	-	3.86-02	1.8E-01	-	-	=	æ	-	-	-	-	4	-	3.8E-02	1.8E-01
iron	a	-		3.0E+02	ani.	-	H-	3.0E+02	-	-		-	77	-	-	-	4	-	-	3.0E+02	-
Isophorone ^C	0	-	64	3.5E+02	9.6E+03	-	-	3.SE+02	9.6E+03	-	-	2	**	-	2	-2	21	-	-	3.55+02	9.5E+03
Kepone	0	-	0.0E+00	-		-	0.0E+00	-		2	-	-			14	-	-	-	0.0E+00	-	-
Lead	0	2.05+02	2.3E+01	1.5E+01		2.0E+02	2.36+01	1.5E+01	-	-	-	-	~	-	-	-	-	2.0E+02	2.3E+01	1.5E+01	+
Malathion	n.		1.0E-01	-		10000	1.0E-01	-	-		2	-		2	5	-	-	-	1.0E-01	-	-
	0	-	1,00,01	5.0E+01			-	5.0E+01		-	-	-	-	-	-	-	-	-	-	5.0E+01	- 12
Manganese	THE PARTY OF THE P	V Salver	7.75.01			1.4E+00	7.7E-01				-		94				-	1.4E+00	7.7E-01	44	**
Mercury	0	1.4E+00	7.7E-01	2.001.01		1.45.400	7.7E-U1		1.6E+03					1	-			-	-	4.7E+01	1.5E+03
Malhyl Bromide	0	141		4.7E+01	1.5E+03			4.7E+01					3			-		-	-	4.6E+01	5.9E+03
Methylene Chloride C	0			4.6E+01	5.9E+03	-	0.000.00	4,6E+01	5.9E+03							20	-		3.05-02	1.0E+02	-
Methoxychior	II.	4	3.05-02	1.0E+02	-	-	3.0E-02	1.0E+02	**	-	-						40	1 3	0.0E+00	-	_
Mirex	0	-	0.0E+00		-	-	0.0E+00		* 600 000	-	-	-	-		- 3			2 55.02		6.1E+02	4.6E+03
Nickal	0	2.6E+02	2.9E+01	6.1E+02	4.6E+03	2.6E+02	2.96401	6.1E+02	4.65+03	-		**	-	_		-	-	2.6E+02	2.9E+01		
Nitrate (as N)	0	-3	136	1.0E+04		-11	-	1.0E+04	-	**	-	**	-	-	-	-	10	-	-	1.0E+04	-
Nitrobenzene	0	-		1.7E+01	B.9E+02	-		1.7E+01	6.9E+02	-	-	+	7	-	-		**	-		1.7E+01	6.9E+02
N-Nitrosodimethylamine ⁵	0	-	-	6.9E-03	3.0E+01	-	.55	6.9E-03	3.0E+01	77	-	-	-	-	-	-	-	7	-	6.9E-03	3.0E+01
N-Nitrosodiphenylamine ⁶	0		MY.	3.3E+01	6.0E+01	-	=	3.3E+01	6.0E+01	- 44	-		-	-	-	-	*	-	-	3.3E+01	6.0E+01
N-Nitrosoot n-propylamine ^C	T CO	-	-	5.0E-02	5.1E+00		-	5.0E-02	5.1E+00	-	-	-	~	-	-	-	**	-	-	5.0E-02	5.1E+00
Nonyiphenoi		2.8E+01	6.6E+00	-		2.8E+01	6.6E+00	-	34.	~	-	-	-	-	-	-	**	2.8E+01	6.6E+00	9	-
Parathion	Q	6.5E-02	1,3E-02		-	6.5E-02	1.3E-02	341	281	-		-	2	-	-	144	*	5.5E-02	1,3E-02	-	-
PCB Total ^C		-	1.4E-02	6.4E-04	6.4E-04	-	1.4E-02	8.4E-04	6.4E-04	-	-	-	-	2	-		-	-	1.45-02	6.4E-04	6.4E-04
Plentachlorophenol ^{ti}	711/0	7.7E-03	5.9E-03	2.7E+00	3.0E+01	7.7E-03	5.9E-03	2.7E+00	3.0E+01	-	-	4	-	-	-	-	-	7.7E-03	5.9E-03	2.7E+00	3.06+01
Priend	9		**	1.0E+04	8.6E+05	-	-	1.0E+04	8.6E+05	340	-	-	4	-	*	-	4	-	-	1.0E+04	B.6E+05
Pyrene	, a	-	-	8.3E+02	4.0E+03	1941	**	8.3E+02	4.0E+03	le:	~	-	4	-	-	-	-	-		8.3E+02	4.0E+03
Radionuclides	0			-	-	140	-	-	-	-	-	9.	+			-	44	-	-	-	-
Gross Alpha Activity	一种原源																				
(pCi/L) Beta and Photon Activity	O.	-	-	1.5E+01	17	-	-	1.5E+01	-	346	-	**	14		**	~	**	-	-	1.5E+01	-
(mram/yr)	00			4.0E+00	4.0E+00	-		4.0E+00	4.0E+00	-	-	-	-		44	94	24		-	4.0E+00	4.0E+00
Radium 226 + 228 (pCi/L)	DESCRIPTION AND ADDRESS OF		**	5.0E+00	-	-		5.05+00	-	-		a.		-		4	-	-	-	5.0E+00	-
Uranium (ug/l)	0	-	-	3.0E+01	71	-		3.0E+01	-									-	-	3.0E+01	-

Parameter	Background		Water Qui	ality Criteria			Wasteload	Allocations			Antidegrada	ation Baseline		1	Intidegradati	on Allocations			Most Limit	ing Allocation	5
(ug/i unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronia	HH (PWS)	HH.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	2.0E+01	5.0E+00	1.75+02	4.2E+03	14	-	-	-	-	-	-	**	2.0E+01	5.0E+00	1.7E+02	4,2E+03
Silver	0	7.1E+00	-	-	4.	7.1E+00	-	-	-	**	-	**	-	4	-	**	-	7.1E+00	-	-	*
Sulfate	0.	-	-	2.5E+05	**		-	2.5E+05	**	-	-	-	+		+	-	+	-	-	2.5E+05	-
1,1,2,2-Tetrachloroethane ^C	0	-	**	1.7E+00	4.0E+01	- 10	-	1.7E+00	4.0E+01	***	19	-	-	+	441	**	**	-		1.7E+00	4.0E+01
Tetrachloroethylene ^C	0	-	-	6.9E+00	3.3E+01	-	-	6.9E+00	3.3E+01	-	-	-	-	-	-	-	-	-	-	6.9E+00	3.3E+01
Thallium	20mm 0		161	2.4E-01	4.7E-01	-	-	2.4E-01	4.7E-01	-	-	77	-	-	100	- 44	-	-	-	2.4E-01	4.7E-01
Toluena	0	-	-	5.1E+02	6.0E+03	-	-	5.1E+02	6.0E+03		-	-		-	-		-	-	-	5.1E+02	6.0E+03
Total dissolved solids	0.4	**	-	5.0E+05	-	-	**	5.0E+05	-		-	-	-	-	-	-	-	-	-	5.0E+05	-
Toxaphene ⁰	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	7.3E-01	2.0E-04	2.8E-03	2.8E-03	-	-	-	**	-	- 14	4	**	7.3E-01	2.0E-04	2.8E-03	2.8E-03
Tributyitin	0.7	4.6E-01	7.2E-02	(64)		4.6E-01	7.2E-02	**	-	**	-	-	46	- 10	+	+	-	4.6E-01	7.2E-02	-	-
1,2,4-Trichlorobenzene	0	**	-	3.5E+01	7.0E+01	**	44	3.5E+01	7.0E+01	.00	100	-	-			-	-	-	-	3.5E+01	7.0E+01
1.1.2-Trichloroethane ^C	d	-	-	5.9E+00	1.6E+02	- 90	-	5.BE+00	1.6E+02	-	+	-	-		**	-	-	-	-	5.9E+00	1.6E+02
Trichloroethylene C	0.0	-	4	2.5E+01	3.0E+02	-	-	2.5E+01	3.0E+02			-	-	**	-		14	-	-	2.5E+01	3.0E+02
2,4,6-Trichlorophenol C	0		**	1.4E+01	2.4E+01	-	-	1.4E+01	2.4E+01	**	-	-	-	-	-	-	144	-	-	1.4E+01	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	Q.	-	-	5.0E+01	-	**	**	5.0E+01	-		-	-	-	-	-	in the	-	-	-	5.0E+01	-
Vinyl Chloride ^G	0	-	-	2.5E-01	2.4E+01	-	**	2.5E-01	2.4E+01	-	-	=	12	+	-	-	**	-	-	2.5E-01	2.4E+01
Zinc	0	1.7E+02	1.7E+02	7.4E+03	2.6E+04	1.7E+02	1.7E+02	7.4E+03	2.6E+04		-			-			-	1.7E+02	1.7E+02	7.4E+03	2.8E+04

Notes

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. *C* indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background conc.) + background conc.) for acute and chronic
 - = (0.1(WQC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 3QQ10 for Chronic Ammonia, 7Q10 for Other Chronic, 3QQ5 for Non-carcinogens and Harmonic Mean for Garcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	5.6E+00
Arsenic	1.0E+01
Barium	2.0E+03
Cadmium	9.5E-01
Chromium III	6.3E+01
Chromium VI	6.4E+00
Copper	7,7E+00
tron	3.0E+02
Lead	1.4E+01
Manganese	5.0E+01
Mercury	4.6E-01
Nickel	1.7E+01
Selenium	3.0E+00
Silver	2.8E+00
Zina	6.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

FEMA Industrial - Outfall 201

Permit No.: VA0091464

Receiving Stream:

defferes Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - IQ10 Mix =	100 %	Mean Hardness (as CaCO3) =	310 mg/L
90% Temperature (Annual) ==	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum phi =	su	1Q10 (Wet season)	D MGD	Wet Season - 1Q10 Mlx =	100 %	90% Maximum pH =	SU
10% Maximum pH =	su	30010 (Wet season)	0 MGD	- 30Q10 Mix ≈	0 100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =		30Q5 ≈	0 MGD			Discharge Flow =	0.4 MGD
Public Water Supply (PWS) Y/N? =	Y	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	San						

Parameter	Background		Water Qua	lity Criteria			Wasteloa	d Allocations			Antidegrad	ation Baseline		A	niidegrada	tion Allocations			Most Limit	ing Allocation	is .
(ug/l unless noted)	Conc.	Acute	Chronia	HH (PWS)	HH	Acute	Chronic .	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	НН
Acenapthene	0.	-	-	6.7E+02	9.9€+02	-	-	6.7E+02	9.9E+02	145	49	-	н.	**	-	-	-	-	-	6.7E+02	9.9E+02
Acrolein	n -	-	-	6.1E+00	9.3E+00	-	4	6.1E+00	9,3E+00	-	-	-	77	-	~	-	-	-	-	6.1E+00	9.3E+00
Acrylanitrile ^C	a a	-	100	5.1E-01	2.5E+00	Tee .	-	5.1E-01	2.5E+00		-	-	-	-	-	-	-	-	-	5.15-01	2.5E+00
Aldrin C Ammonia-W (mg/l)		3.0E+00	-	4.9E-04	8.0E-04	3.0E+00	-	4.9E-04	5.0E-04		-	-	+,	*	**	-	*	3.0€+00	-	4.9E-04	5,0E-04
(Yearly) Ammonia-N (mg/l)	0	5.84E+01	7.09E+00	in the second	-	5.8E+01	7,1E+00	10		-	-	+	+	-	-	-		5.8E+01	7.1E+00	-	*
(High Flow)	.04	5.84E+01	7.09E+00	+	-	5.BE+01	7.1E+00	-	-	-	-	-		-				5.8E+01	7.1E+00	-	-
Anthracene		100	-44	B.3E+03	4.0E+04	**	- 100	8.3E+03	4.0E+04	162	- 10	-	***	**	24	**	**	-	-	8.3E+03	4.0E+04
Antimony	0	tal.	144	5.6E+00	6,4E+02	-	***	5.6E+00	6.4E+02	-	1	-	-	- 100	-			-	-	5.6E+00	6.4E+02
Arsenic	0	3.4E402	1,56+02	1.0E+01	-	3.4E+02	1.5E+02	1.0E+01		**	**			-	-	7	7	3,4E+02	1.5E+02	1.0E+D1	-
Barlum	0	**		2.0E+03	-	-	**	2.0E+03	-	-	9	-	+	**	~	-	-	-	-	2.0E+03	-
Benzene ⁰	0	-	49	2.2E+01	5.1E+02	.70	-	2.2E+01	5.1E+02	77	7	7	4	-	19	-	-44	-	-	2.2E+01	5.1E+02
Benzidine ^C	9		1,614	8.6E-04	2.0E-03	-	-	8.6E-04	2.0E-03	-	141	-	-	- 44	**	-	**	-	-	8.66-04	2.0E-03
Benzo (a) anthragene ^G	9.3	- 10	196	3.8E-02	1.8E-01		16	3.8E-02	1.8E-01	-	-	-	-	-	*	**	-	-	-	3.8E-02	1.8E-01
Benzo (b) Iluoramhene ^C	0	-	-	3.8E-02	1.8E-01	7	**	3.8E-02	1.8E-01	100	-	-	**	100	100	-		-	- 10	3.8E-02	1.8E-01
Benzo (k) fluoranthene ^C	0.7		-4	3.8E-02	1.6E-01	**	-90	3.8E-02	1.8E-01	-		-	-	-	7	-	-	-	-	3.86-02	1.86-01
Benzo (a) pyrene ⁰	0	-01	94	3.8E-02	1.8E-01	-	-	3.8E-02	1.8E-01	-	-	161	-0-	-	-	-	-	-	-	3.85-02	1.8E-01
Bis2-Chloroethyl Ether ^C	over a	-	141	3.0E-01	5.3E+00	-	-	3.0E-01	5.3E+00	-	-	-	-	-	-	-		-	-	3,0E-01	5,3E+00
Bis2-Chloroisopropyl Ether	0	-	-	1.4E+03	6.5E+04	-	-	1.4E+03	6.5E+04	-	(97)	-	-		14.	8	-	-	-	1.4E+03	6.5E+04
Bis 2-Ethylhexyl Phthalate ^C	0		-	1.2E+01	2.2E+01		-	1.2E+01	2.2E+01	71	**	-	160	-	-	-	-	-	-	1.2E+01	2.2E+01
Bromoform ⁶	On or the	-	-	4.3E+01	1.46+03	-	-	4.3E+01	1.4E+03	-	-	-	-	-	-	~		-	-	4.3E+01	1.46+03
Butyibenzylphthalate	10000	· · ·	-	1.56+03	1.9E+03		-	1.6E+03	1.9E+03	-	-	-	-	0	-	-	**	-	-	1.5E+03	1.9€+03
Cadmium	. 0	1.4E+01	2.8E+00	5.0E+00	=	1.4E+01	2.8E+00	5,0E+00	-	-		-			-	-	-	1,4E+01	2.8E+00	5.0E+00	-
Carbon Tetrachloride C	0			2.35+00	1.6E+01		-	2.3E+00	1.6E+01	_	-			-	-	-	-	-	-	2.3E+00	1.6E+01
Chlordane d	1107	2.4E+00	4.3E-03	8.0E-03	8.1E-03	2.4E+00	4.85-03	8.0E-03	B.1E-03	-	-	2	~	-	-	-	-	2.4E+00	4.3E-03	8.0E-03	8.1E-03
Chloride	0	8.6E+05	2.3E+05	2.56+05	-	8.6E+05	2.3E+05	2.5E+05	_	_	-	-	1		-			8.6E+05	2.3E+05	2.5E+08	W. 14-40
TRC	0.51	1.9E+01	1.1E+01	(44	-	1.9E401	1.1E+01	-	-		-	-					-	1.9E+01	1.1E+01	21002740	
Chlorobanzene	0	44	-	1,3E+02	1.6E+03		-	1.3E+02	1.6E+03	2			6					1100701	1.16791	1.3E+02	1.8E+03

Parameter	Background		Water Qua	ality Criteria			Wastelca	d Allocations			Amidograd	ation Baseline		1	Antidegrada	tion Allocations			Most Limiti	ng Altocation	ns
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute		HH (PWS)	FIEL	Acute	1	HH (PWS)	НН	Agute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethano ^C	AR DESCRIPTION OF THE PARTY OF	Actio	- CHICKE	4.0E+00	1.3E+02	racaso	T CHICKE	4.0E+00	1.3E+02	rigote	Sinoms	District Seed	-	-	-		-	-	-	4.0E+00	1,3E+0
Chloroform	0		-	3.4E402	1.1E+04	1		3.4E+02	1.1E+04			-	-	-	-	-		-	-	3.4E+02	1.16+0
2000	0	-			1.6E+03		_	1.0E+03	1.6E+03		-		_		-		-	-	-	1.0E+03	1.6E+0
2-Ghloronaphthalene	4 1 0	44	-	1.0E+03							-				_		-	1 -	_	8.1E+01	1.5E+0
2-Chlorophenol	0	2 4 5 4 5	14500	8.1E+01	1.5E+02	n nr nn	4 4 5 5 5	B.1E+01	1.5E+02									8.3E-02	4.1E-02	-	-
Chlorpyrifes	.0	8.36-02	4.1E-02	**		8.3E-02	4.1E-02		-				-		-			1.4E+03	1.9E+02		_
Chromium III	0	1.4E+03	1.9E+02	-	-	1.4E+03	1.9E+02	~	-77			-				-	-	1.6E+01	1.1E+01		_
Chromium VI	0	1.6E+01	1.1E+01	-	-	1.6E+01	1.1E+01		-					1 3			_	1.00101		1.05+02	-
Chromium, Total	0	-	-	1.0E+02			-	1.0E+02	+ 45 80	-									-	3.85-03	1.8E-0
Chrysena ^C	0	-	-	3.8E-03	1.8E-02	1 100 50	-	3.8E-03	1.8E-02	-	-	3	-		-			205.02	2.4E+01	1.3E+03	**
Copper	1910 - W	3.9E+01	2.4E+01	1.3E+03	-	3.9E+01	2.4E+01	1.3E+03	-	44	-				-	-	-	3.9E+01		1.4E+02	1.6E+0
Oyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	2.2E+01	5.2E+00		1.6E+04	A		-	-	-	-	-	-	2.2E+01	5.2E+00		
DDD c	-0	-	-	3.1E-03	3.1E-03	***	-	3.1E-03	3 1F-03		-	~	-	1	-	-	-		-	3.1E-03	3.1E-0
DOE c	.0	**	-	2.2E-03	2.2E-03	**	-	2.2E-03	2.2E-03	77	-	-	-	-	44	- 1	(See)		-	2.25-03	2.2E-0
DOTC	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.1E+00	1.0E-03	2.2E-03	2.2E-03	=	-	7	-	-	100	**	***	1.1E+00	1.0E-03	2.2E-03	2.2E-0
Demeton	0	-	1.0E-01	-	-		1.0E-01		17	200	-	+	-	***	-	-	-	-	1.0E-01	-	-
Diazinon	0	1,7E-01	1.7E-01	-	- 100	1.7E-01	1.7E-01		100	-	-	-	40	-	-	**	-	1.7E-01	1.7E-01		-
Dibenz(a,h)anthracene ^{ti}	0	-	191	3.8E-02	1.8E-01	-	-	3.86-02	1.BE-01	-	-	-	-	-	- 25	-	-	-	-	3,8E-02	1.8E-0
1,2-Dichlorobenzene	0	-	(27)	4.2E+02	1.3E+03	-	-	4.2E+02	1.3E+03		-	-	-	-	+	-	-	-	-	4,2E+02	1.3E+0
1,3-Dichlorobenzene	D	-	-	3.25+02	9.6€+02	-	-	3.2E+02	9,6E+02		-	85	-	-	+	-	=	-	-	3.2E+02	9.6E+4
1,4-Dichlorobenzene	.0	-	-	6.3E+01	1.9E+02	-	-	6.3E+01	1.9E+02	- 65	-	-	-	-	=	-	-	-	-	6.3E+01	1.95+0
3,3-Dichlorobenziding ⁰	0	-	-	2 IE-01	2.8E-01	-	-	2.1E-01	2.BE-01	-	-	-	-	-	-	***	-	-	-	2.1E-01	2.8E-0
Dichlorobromomethane 5	-0	-	341	5.5E+00	1.7E+02	-	-	5.5E+00	1.7E+02	-	-	-	-	-	-	-	-	-	-	5.5E+00	1.7E+0
1,2-Dichlorcethane C	0 3	-	-	3.8E+00	5.7E+02	-	99	3.8E+00	3.7E+02	-	-	13	-	+4	-	-	-	-	-	3.8E+00	3.7E+0
1,1-Dichloroothylene	0	-		3.3E+02	7.1E+03	н.	-	3.3E+02	7.1E+03	-	-	- 2	-	4-	-	9	-	-	-	3.3E+02	7.1E+4
1,2-trans-dichloroethylene	0	-	-	1.4E+02	1.0E+04	-	_	1.4E+02	1.0E+04	-	-		**	**	-	-	-	-	-	1.4E+02	1.0EH
2,4-Dichlorophenol	n.	-	-	7.7E+01	2.9E+02	-	-	7.7E+01	2.9E+02	-	-	**	-	-	-	-	-	-	-	7.7E+01	2.9E+
2,4-Dichlorophenoxy					***************************************									1					-	1.DE+02	-
acetic acid (2,4-D)	0	-		1.0E402	-	-	-	1.0E+02		741	-	-	-	-						5.0E+00	1.5E+0
1,2-Dichloropropane	2		-	5.0E+00	1.5E+02		- 21	5.0E+00	1.5E+02	-		-		-	-	-		1 3		3.4E+00	2.1E+0
1,3-Dichioropropena C	-	- 72	-	3.4E+00	2.1E+02	-	**	3.4E+00	2,16+02	-	-				-	-	-	n ar as	205.00		
Dieldrin ^C	Ω	2.4E-01	5.6E-02	5.2E-04	5.4E-04	2.4E-01	5.6E-02	5.2E-04	5.4E-04	-	-				-		-	2.4E-01	5,66-02	5.2E-04	5.4E-0
Diethyl Phthalatn	G.	- 34	77.	1.7E+04	4.4E+04	-	-	1.7E+04	4.4E+04	-	-	-	**	-	-	-			-	1.7E+04	4.4E+
2,4-Dimethylphenol	0	-	-	3.8E+02	8.5E+02	-	-	3.8E+02	8.5E+02	-	-		-		-	-		-	-	3.8E+02	8.5E+0
Dimethyl Phthalate	0	-	-	2.7E+05	1.1E+06	-		2.7E+05	1.1E+06	-	**	н	-		-	-	-	-	-	2.7E+05	1.1E+
Di-n-Butyi Phthalate	0		-	2.0E+03	4.5E+03	-	-	2.0E+03	4.5E+03	-	-		-	-	-	-	-	1 -	-	2.0E+03	4.5E+4
2,4 Dinitrophenol	0	-	-	6.9E+01	5.3E+03	-	-	6.9E+01	5.3E+03	-		19	-	+	-	-	-	-	-	6.9E+01	5.3E+0
2-Methyl-4,6-Dinitrophenol	0 -	-	-	1.3E+01	2.8E+02	~	-	1.3E+01	2.8E+02	-	77	-	-	-	-	3	-	-	-	1.3E+01	2.8E+4
2,4-Dinitrotoluene ^C Dioxin 2,3,7,8-	- W. /	-	÷	1.1E+00	3,4E+01	-	-	1.1E+00	3.4E+01	-	-	-	~	2	4	-	-	-	-	1.7E+00	3.4E+1
tetrachlorodibenzo-p-dloxin	1 00	-	44	5.0E-08	5.1E-08	300	-	5.0E-08	5.1E-0B	-	**	-	77	-	-	-	-	-	-	5.0E-08	5.1E-0
1,2-Diphenyihydrazine	0	1-	in.	3.6E-01	2.0E+00	100	-	3.8E-01	2.0E+00	-	-	-	-	-	-	-	-	-	-	3.65-01	2.0E+
Alpha-Endosulfan	0	2,2E-01	6.6E-02	6.2E+01	B.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	-	-	-	-	-	-	-	-	2.2E-01	5,6E-02	6.2E+01	8.9E+
Beta-Endosultan	0	2,2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	-	-	- 100	-	-	-	-	-	2.2E-01	5.6E-02	6.2E+01	8.9E+
Alpha + Beta Encosulfan	h	2,2E-01	5.6E-02	-	-	2.2E-01	5.6E-02	-		-	-	-	-	-	-	-	-	2.2E-01	5.6E-02	*	-
Endosulfan Sulfate	0	-	-	6.2E+01	8.9E+01	-	-	6,26+01	8.9E+01	-	**	100	-	-	-	-	-	-	-	6.2E+01	9.9E+
Endrin	0.7	6.6E-02	3.6E-02		6.0E-02	8,6E-02	3.6E-02		6.0E-02	-	-	-	-	-	-	-	2	8.6E-02	3.6E-02	5.9E-02	6.0E-0
Endrin Aldehyde	0	-	-	2.9E-01	3.0E-01	-		2.9E-01	3.0E-01	-	-	-	-			-	-	-	-	2.96-01	3.0E-0

Parameter	Background	Water Quality Criteria			Wastelpad Allogations				Antidegradation Baseline			Antidegradation Allocations				Most Limiting Allocations					
(ug/l unless noted)	Gond.	Acute	Chronic	HH (PWS)	нн	Acute		HH (PWS)	HH	Acute		HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
	219 6 W T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		CHIPONIO			Audie	LOURONE		2.1E+03	PHINIS	- Silibies	Track stoy	4	**	_	-		-	-	5.3E+02	2,1E+03
Ethylbenzene	0	-	-	5.3E+02	2.1E+03	7	-	5.3E+02		-	-						0.			1.3E+02	1.4E+02
Fluoranthene		-	_	1.3E+02	1.4E+02	-	-	1.3E+02	1.4E+02				-							1.1E+03	5,3E+03
Fluorene	0	-	**	1.1E+03	5.3E+03	-	-	1.1E+03	5.3E+03	-	-	-	-								Distantia.
Foaming Agents	10	-	-	5.0E+02	-	-	-	5.05+02	100	-		7		-		-	-	1		5.0E+02	-
Guthlon	0.00	Contract of	1.0E-02	-	-	2	1.0E-02	-	-	-	100	-			-		**	-	1.0E-02		
Heptachlor o	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	5.2E-01	3.8E-03	7.98-04	7.9E-04	745	-	-	-	246	-	-	-	5,2E-01	3.8E-03	7.9E-04	7.9E-04
Heptachlor Epoxide ^C	10 M	5.2E-01	3.8E-03	3.9E-04	3.9E-04	5.2E-01	3.8E-03	3.9E-04	3.9E-04	701	-	-	-	***	-		**	5.2E-01	3,8E-03	3.9E-04	3.9E-04
Hexachlorobenzene	0	-	-	2.8E-03	2.9E-03	-	-	2.8E-03	2.9E-03	-	-	**	**	-	-	-	**	-	-	2.8E-03	2.9E-03
Hexachlorobutacione ⁰	q ·	26	*	4.4E+00	1.88+02	-	-	4.4E+00	1.8E+02	-	-	-	-	-	4			-	-	4.4E+00	1.8E+0
Hexachlorocyclohexane				2.12.14					100.02											0.85.00	4 NE 05
Alpha-BHC ^D	0	-	-	S-6E-05	4.9E-02	-	**	2.6E-02	4.9E-02	-	~			-		**	-	-	-	2.6E-02	4.9E-02
Hexachiorocyclohexane Bela-BHC ^G	10			9.1E-02	1.7E-01		- 21	9.16-02	1.7E-01			_	-	_		-	-	-	-	9.1E-02	1.7E-01
Hexachlorocyclohexane				BITCHE	10/6-01		-	avitable:	(NEW)					1							ano.
Gamma-BHC ^C (Lindane)	0	9.5E-01	-	9.8E-01	1.8E+00	9.5E-01	-	9.86-01	1.8E+00	-	-	~	~	-	-	***	-	9.5E-01	-	9.8E-01	1.8E+00
Hexachlorocyclopentadiene	6	-	-	4.0E+01	1.1E+03	-	-	4.0E+01	1.1E+03	-	_	-	-	-	-			-	-	4.0E+01	1.1E+00
Haxachlorouthane ^C	0	-		1.4E+01	3.3E+01		-	1.4E+01	3.3E+01	-	_		-	-	-	-	-	-	-	1.4E+01	3.3E+01
Hydrogen Sulfide	0	-	2.0E+00	7.10107	-		2.0E+00	-	4.96.74	-	-		_	-	-	**	-	-	2.0E+00	-	-
Indeno (1,2,3-cd) pyrene C	0		Z.UC YUU		1.BE-01	12	CALTON		1,8E-01		-		2	-	-	-	**	-	-	3.85-02	1.8E-01
The state of the s	A GATIVA			3.86-02				3.8E-02	1,06501											3.0E+02	_
Iron		-		3,0E+02	A 100 AA		-	3.0E+02	0.45.00			-			-		-			3.5E+02	9.5E+03
Isophurane ^D	Variable state of			3.5E+02	9.6E+03	-	-	3.5E+02	9.6E+03	-	**	-	-	100				1 2	0.0E+00	-	3.02.70
Kepone	O Company	-	0.0E+00	-	-		0.0E+00		141	-	**	-	-		**	-	-				
Lead		5.0E±02	5.7E+01	1.5E+01	**	5,0E102	5.7E±01	1.5E+01	-	1111	-	-	-		7	+	17	5.0E+02	5.7E+01	1.5E+01	_
Malathion	0	-	1.0E-01		*	-	1.0E-01	+	-	- 5	-	7		7	7	-		-	1.0E-01	202.00	-
Manganese	0	-	**	5.0E+01	-	- 200	-	5.0E+01	-	-	~	-	-	-	12	-	20	-	-	5.0E+01	-
Mercury	2 0	1.4E+00	7.7E-01	**	**	1.4E+00	7.7E-01	**	- 17	-	-	-	14	-	***	-	-	1.4E+00	7.7E-01	**	**
Methyl Bromide	0.50	-	-	4.7E+01	1.5E+03	-	100	4.7E+01	1.5E+03	-	-	44	-	1441	-	-	-	-	199	4.7E+01	1.5E+0
Methylene Chloride C	0	in.	-	4.6E+01	5.9E+03	-	-	4.6E+01	5.9E+03	-	-		-	-	100	-	-	-	-	4.6E+01	5.9E+0
Methaxychlor	0	-	3.0E-02	1.0E+02	-	-	3.0E-02	1.0E+02	-	-	-	=	-	-	-	-	-	-	3.0E-02	1.0E+02	-
Mirex	0	-	0,0E+00	-	-	-	0.0E+00	-	90	-	-	-	77	-	16	-	#	-	0.0E+00	-	941
Nickel	a a	4.7E+02	5.3E+01	6.1E+02	4.6E+03	4.7E+02	5.3E+01	6.1E+02	4.6E+03	-	-	75	-	-	-	-	-	4.7E+02	5.3E+01	6.1E+02	4.6E+0
Nitrate (as N)	A La La Co	-	-	1.0E+04	-	-	-	1.0E+04	н	-	-	-	-	4	-	49.	-	-	++	1.0E+04	769
Nitrobenzene	0	-	.00	1.7E+01	6.9E+02	-	100	1.7E+01	6.9E+02	-	-	-		-	**		18	-	-	1.7E+01	6.9E+0
N-Nitrosodimethylamine ^C	0	-	-	6.9E-03	3.0E+01	-	-	6.9E-03	3.0E+01		-		**	36	-	-	-	-	-	6.9E-03	3.0E+0
N-Nitrosodiphenylamine ^C	0	-	4.	3.3E+01	6.0E+01	-	54	3.3E+01	6.0E+01	-	-	4	- 1	-	-	-	-	-	-	3,3E+01	6.0E+0
N-Nitrosodi-n-propylamine ¹³	0	-	-	5.0E-02	5.1E+00	-	**	5.0E-02	5.1E+00	-	-	-	-	-	-	-	-	-	(4)	5.0E-02	5.1E+0
Nany(phenol	0	2.8E+01	6.6E+00	-	-	2.8E+01	6.6E+00	-	54	-	-	19	-	-	-	-	-	2.8E+01	6.6E+00	-	<u>a</u>
Parathlon		6.5E-02	1.3E-02	-		6.5E-02	1.3E-02	4	-	-		-	-	_	44	-	100	8.5E-02	1.3E-02	-	144
PCB Total ^Q	p	-	1.4E-02	6.4E-04	8.4E-04	-	1.4E-02	6.4E-04	6.4E-04	-		-	-	-	-		-	-	1.46-02	6.4E-04	6.45-0
Pentachiorophenol C	0	7.7E-03	5.9E-03		3.0E+01	7.7E-03			3.0E+01						-		-	7.7E-03	5.0E-03	2.7E+00	3.0E+0
	CANADA PARAMATANA					100,000				-								1,110,000	-	1.0E+04	8.6E+0
Phenol	Contract of the contract of th		-	1.0E+04	8.6E+05	-	-	1.0E+04	8.6E+05	-	7	7	-	-			-				
Pyrene Particolidation	C	-	(20)	8.3E+02	4.0E+03	-	6	8.3E+02	4.0E+03	-	**	-	-	100	-	-	-	-	-	8.3E+02	4.0E+0
Radionuclides Gross Alpha Activity	0	-	_	-	-	-	-	-	-	-	-	-	**	7	14	-	-	-	-	-	-
(POVL)	100	-	-	1.5E+01	-	-	-	1.5E+01	-	-	*	5	12	-	4	-	4	-	-	1.5E+01	-
Beta and Photon Activity	(Par () 12				200																
(mrem/yr)		-	-	4.0E+00	4.0E+00	-	-	4.0E+00	4.0E+00	-	-	**	-	èr	100	-	-	-	-	4.0E+00	4.0E+0
Radium 226 + 228 (pCi/L)	VIII CONTRACTOR OF THE PARTY OF	-	-	5.0E+00	-	-	-	5,0E+00	-	**	-	-5	**	-	100	-	-	-	-	5.0E+00	-
Uranium (ug/l)	THE TOTAL PARTY		irr.	3.0E+01	-	-	44	3.0E+01	-	-	-			- 64	12.	-	-	-	4	3.0E+01	4

Parameter	Background		Water Qua	ality Criteria			Wasteload	d Allocations			Antidegrad	ation Baseline		1	Antidegradat	ion Allocations			Most Limit	ing Allocation	s
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	BH	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	0.0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	2.0E+01	5.0E+00	1.7E+02	4.2E+03	44.	-	l sel		44	-	**	- 44	2.0E+01	5.0E+00	1.7E+02	4.2E+0;
Silver	0	2.4E+01	86	-	4	2.4E+01	-	-	-	-	-	144	-	-	-	-	-	2.4E+01	-	-	-
Sulfate	0	-	**	2.5E+05	-	-	-	2.5E+05	-	-	100	**	-	-	-	75	**	-	-	2.5E+05	-
1,1,2,2-Tetrachloroethane ^C	0 5		-	1.7E+00	4.0E+01	-	-	1.7E+00	4.0E+01	-	-	-	-	**	-	-	77	-	140	1.7E+00	4.0E+0
Tetrachloroethylene ^G	0	-	100	6.9E+00	3.3E+01	~	-	6.9E+00	3.3E+01	***	-	~	-	-	144	-	-	-	-	6.9E+00	3.3E+01
Thallium	0.0	-	-	2.4E-01	4.7E-01	+	-	2.4E-01	4.7E-01	-		-	4	-	-	**	**	-	-	2.4E-01	4.7E-01
Toluene	c	-	-	5.1E+02	6.0E+03	**	44.	5.1E+02	6.0E+03	-	-	- 20	-	-	-	-	-	-	-	5.1E+02	6.0E+0
Total dissolved solids	Q.	-	164	5.0E+05	-	-	-	5.0E+05	44	4	-	-	-	-	-	**	**	-	-	5.0E+05	-
Toxaphene ^C	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	7.3E-01	2.0E-04	2.8E-03	2.8E-03	-	-	-	**		-	-	-	7.3E-01	2.0E-04	2.8E-03	2.8E-02
TributyItin	0 = 0	4.6E-01	7.2E-02	+-	-	4.6E-01	7.2E-02	-	-	-	-		-	-	+	-	-	4.6E-01	7.2E-02		-
1,2,4-Trichlorobenzena	0.1			3.5E+01	7.0E+01	-	-	3,5E+01	7.0E+01	-	**	4	н	**		**	-	-	-	3.5E+01	7.0E+0
1,1,2-Trichloroethane ⁰	0 = 0		-	5.9E+00	1.6E+02	-	~	5.9E+00	1.6E+02	-	177	+	-	-	-	***		-	-	5.9E+00	1.6E+0;
Trichloroethylene ^C	0	- 24	**	2.5E+01	3.0E+02	+		2.5E+01	3.0E+02	and .	+	-	**	-	-		-	-	-	2.5E+01	3.0E+0;
2,4,6-Trichlorophenol C	0	-	+	1.4E+01	2.4E+01	-	-	1.4E+01	2.4E+01	-	-	-	-	-	-	-	**	-	-	1.4E+01	2.4E+0
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	-	-	5.0E+01	-	-	-	5.0E+01	-	-		-	-	-	-	-	**	-	-	5.0E+01	-
Vinyl Chloride ^C	0	-	**	2.5E-01	2.4E+01	-		2.5E-01	2.4E+01	-	-		-	-	-	-	***	+	-	2.5E-01	2.4E+0
Zina	0	3.1E+02	3.1E+02	7.4E+03	2.6E+04	3.1E+02	3.1E+02	7.4E+03	2.6E+04		-	-	- 44	-	-	-	+	3.1E+02	3.1E+02	7.4E+03	2.6E+0

Notes:

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background conc.) + background conc.) for acute and chronic
 - = (0.1(WOC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 3QQ10 for Chronic Ammonia, 7Q10 for Other Chronic, 3QQ5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	5.6E+00
Arsenic	1.0E+01
Barlum	2.0E+03
Cadmium	1.7E+00
Chromium III	1.1E+02
Chromium VI	5.4E+00
Copper	1.4E+01
Iron	3.0E+02
Lead	1.5E+01
Manganese	5.0E+01
Mercury	4.6E-01
Nickel	3.2E+01
Selenium	3.0E+00
Silver	9.7E+00
Zina	1.2E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FEMA Industrial Outfall 101 (VA0091464) Detected Parameters in Monitoring Conducted in January and March 2011

<u>Parameter</u>	Level Detected in Discharge	Acute WQS	HH Standard
Flouride	0.2 mg/L	None	None
Nitrate	1.5 mg/L	None	None
Alpha, T	0.126±0.753 piCu/L	None	None
Beta, T	2.21±1.21 piCu/L	None	None
Total Alpha Radium	0.484±0.382 piCu/L	None	None
Radium 226	3.77±0.31 piCu/L	None	None
Sulfur	21.3 mg/L	None	None
Aluminum	120 μg/L	None	None
Barium	34 μg/ L	None	None
Magnesium	12,100 μg/L	None	None
Manganese	55 μg/L	None	None
Copper	9.2 μg/L	20 μg/L	None
Cyanide	5.5 μg/L	22 μg/L	16,000 μg/L
Chloroform	8.2 μg/L	None	11,000 μg/L

Hardness at this outfall is 152 mg/L

FEMA Industrial Outfall 201 (VA0091464) Detected Parameters in Monitoring Conducted in November 2006

<u>Parameter</u>	Level Detected in Discharge	Acute WQS	HH Standard
Flouride	0.13 mg/L	None	None
Nitrate	1.6 mg/L	None	None
Phosphorus	0.0B40 mg/L	None	None
Beta, T	4.0 piCu/L	None	None
Radium, T	0.2 ± 0.2	None	None
Radium 226, T	0.2 ± 0.1	None	None
Sulfate	27.9 mg/L	None	None
Surfactants	0.0409 mg/L	None	None
Barium	16 μg/L	None	None
Iron	244 μg/L	None	None
Magnesium	17,600 μg/L	None	None
Manganese	8.1 μg/ L	None	None
Titanium	13.9 μg/L	None	None
Copper	21 μg/L	39 μg/ L	None
Zinc	16 μg/L	310 μg/L	16,000 μg/L

Hardness at this outfall is 310 mg/L

4/21/2011 10:34:24 AM

Facility = FEMA Industrial -- Outland Of Chemical = Copper Chronic averaging period = 4
WLAa = 20
WLAc = Q.L. = 5
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9.2

Variance = 30.4704

C.V. = 0.6

97th percentile daily values = 22.3874

97th percentile 4 day average = 15.3068

97th percentile 30 day average = 11.0956

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

Admit is needed based on Acute Toxicity.

Maximum Daily Limit = 20 Average Weekly limit = 20 Average Monthly Limit = 20

The data are:

4/21/2011 10:40:56 AM

Facility = FEMA Industrial -- Outfall 101

Chemical = Cyanide

Chronic averaging period = 4

WLAa = 22

WLAc =

Q.L. = 5

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 5.5
Variance = 10.89
C.V. = 0.6
97th percentile daily values = 13.3837
97th percentile 4 day average = 9.15084
97th percentile 30 day average = 6.63329
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5/20/2011 11:44:50 AM

Facility = FEMA Industrial--Outfall 201
Chemical = Copper
Chronic averaging period = 4
WLAa = 39
WLAc =
Q.L. = 5
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 21.4

Variance = 164.865

C.V. = 0.6

97th percentile daily values = 52.0751

97th percentile 4 day average = 35.6051

97th percentile 30 day average = 25.8095

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 39
Average Weekly limit = 39
Average Monthly Limit = 39

The data are:

5/20/2011 11:47:01 AM

Facility = FEMA Industrial--Outfall 201 Chemical = Zinc Chronic averaging period = 4 WLAa = 310 WLAc = 310 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 16.5
Variance = 98.01
C.V. = 0.6
97th percentile daily values = 40.1513
97th percentile 4 day average = 27.4525
97th percentile 30 day average = 19.8998
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

Storm Water Benchmark Concentration Values FEMA Industrial (VA0091464) Sampling Conducted in 2004

Outfall 001

<u>Parameter</u>	Level Detected in Discharge	Acute WQS	Benchmark Monitoring Con. Value
TSS	NA	NA	$100 \mathrm{mg/L^1}$
Zinc	11.8 μg/L	170 μg/L	340 μg/L
Copper	NA	20 μg/L	40 μg/L²
Cyanide	NA	22 μg/L	4 4 μg/L ²

- 1. Per Sector AD Requirements
- 2. Although these parameters were not reported on EPA Form 2F, they were found at Internal Outfall 101 and hence should be monitored.

Outfall 002

<u>Parameter</u>	Level Detected in Discharge	Acute WQS	Benchmark Monitoring Con. Value
TSS	NA	NA	70 mg/L¹
Zinc	14. 7 μg/L	310 μg/L	620 μg/L
Copper	13.1 μg/L	39 μg/L	78 µg/L

1. Per Sector AD Requirements and the Goose Creek Benthic TMDL

Public Notice - Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater/stormwater into water bodies in Loudoun/Clarke Counties, Virginia.

PUBLIC COMMENT PERIOD: September 15, 2011 to 5:00 p.m. on October 14, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater/Stormwater issued by DEQ, under the authority of the State Water Control Board.

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Federal Emergency Management Agency, Mount Weather Emergency Operations Center, P.O. Box 129, Berryville, VA 22611; VA0091464

NAME AND ADDRESS OF FACILITY: Mount Weather Emergency Operations Center, 19844 Blue Ridge Mountain Road, Berryville, VA 20135

PROJECT DESCRIPTION: The Federal Emergency Management Agency has applied for reissuance of a permit for the federal industrial discharges at the Mount Weather Emergency Operations Center. The applicant proposes to release industrial wastewater and storm water from a federal facility at an average rate of 0.051 million gallons per day into an unnamed tributary of Jefferies Branch in Londoun County located in the Potomac River watershed and 0.19 million gallons per day into an unnamed tributary of Reservoir Hollow in Clarke County located in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, total suspended solids, total recoverable copper, temperature, total residual eblorine, and total petroleum hydroearbons.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another eomment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Anna T. Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193 Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov Fax: (703) 583-3821

State "Transmittal Checklist" ta Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Major []	Minor [X]	Industrial [X]	Municipal []	
Date:	June 2, 2011			
Permit Writer Name:	Anna Westernik			~~~
NPDES Permit Number:	VA0091464			· · · ·
Facility Name:	FEMA Industrial			

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
 Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)? 	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?	X		,

I.B. Permit/Facility Characteristics	Yes	No	N/A
1. Is this a new or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	Х		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	х		
8. Does the facility discharge to a 303(d) listed water? DOWNSTREAM	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit? DOWNSTREAM	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? DOWNSTREAM	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?	X		

I.B. Permit/Facility Characteristics - cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		х	
14. Are any WQBELs based on an interpretation of narrative criteria?			X
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?	·	х	
16. Does the permit contain a compliance schedule for any limit or condition?	X		
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?	Х		
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?	Х		
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for <u>all</u> non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude	\mathbf{x}		
and longitude (not necessarily on permit cover page)?			
2. Does the permit contain specific authorization-to-discharge information (from where to where,	. X		
by whom)?	<u> </u>		
II.B. Effluent Limits - General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of			
technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that			
are less stringent than those in the previous NPDES permit?	X		
			
II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			Х
b. If no, does the record indicate that a technology-based analysis based on Best Professional			
Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?	X		
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent	Х		
with the criteria established at 40 CFR 125.3(d)?			22724656
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculation are based on a "reasonable measure of ACTUAL production" for the facility (not design)?	s		x
5. Does the permit contain "tiered" limits that reflect projected increases in production or flow?		Х	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			х
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	Х		
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?		х	
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		Х	
H.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering		110	14/A
State narrative and numeric criteria for water quality?	X		
Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			х
3. Does the fact sheet provide effluent characteristics for each outfall?	Х		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	х		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	Х		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	Х		

I.D. Water Quality-Based Effluent Limits - cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	Х		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?		X	
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	Х		
Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	х		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	Х		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	х		
B. Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	х		
I.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?		Х	
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?	х		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	х		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?	Х		
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	Х		

1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?						
List of Standard Conditions - 40 C	FR 122.41					
Duty to comply	Property rights	Reporting Req	Reporting Requirements			
Duty to reapply	Duty to provide information	Planned change				
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance				
not a defense	Monitoring and records	Transfers				
Duty to mitigate	Signatory requirement	Monitoring reports				
Proper O & M Bypass Complian				les		
Permit actions	Upset	24-Hour r	eporting			
•			-complian	ice		
 Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]? 						

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name Anna Westernik

Title VPDES Permit Writer Senior II

Signature June 2, 1011

Total Points Factor 2: 10

NPDES PERMIT RATING WORK SHEET

						X Regular Addition	n	
						Discretionary A	ddition	
VP	DES NO.: VAC	091464				Score change,	but no status Cha	ange
						Deletion		
Fac	ility Name: FEN	/IA Industrial (Outfall 001)					
City	y / County: Clar	ke County						
Receiv	ing Water: Res	ervoir Hollow						
Reac	h Number:							
more of the second of the seco	ility a steam electric phe following character utput 500 MW or greater ar power Plant water discharge greater score is 600 (stop he	ristics? (not using a coolin than 25% of the rec	g pond/lake)	population YES: X NO;	ermit for a mu on greater tha score is 700 (continue)		n sewer serving a	
		F	ACTOR 1:	Toxic Polluta	int Potent	ial		
PCS SIC	Code:	 Primary S	Sic Code:	9229 (Other Sic Cod	es: 4941		
Industrial	Subcategory Code:	000	(Code (000 if no subcate	gory)			
5 .4 .								
						ial column and check		
Toxicity	•	Points	Toxicity Grou	up Code	Points	Toxicity Grou	ıp Code	Points
No pro waste	streams 0	0	3.	3	15	X 7.	7	35
1.	1	5	4.	4	20	8.	8	40
2.	2	10	5.	5	25	9.	9	45
			6.	6	30	10.	10	50
						Code Numbe	r Chackad	7
							Code Number Checked: Total Points Factor 1:	
						Total Folia		35
				low/Stream ction A or Sectio				
Se	ction A – Wastewate	r Flow Only consi	dered	(Section B – W	astewater and Stream	n Flow Considere	d
	Vastewater Type see Instructions)	Code	Points		ater Type	Percent of Instream	Wastewater Conce	ntration at
Type I:	Flow < 5 MGD	11	0	(555 111		11000141110	Code	Points
•	Flow 5 to 10 MGD	12	10	Tvo	e I/III:	< 10 %	41	0
	Flow > 10 to 50 MC		20	,,,		10 % to < 50 %	42	10
	Flow > 50 MGD	14	30			> 50%	43	20
Type II:	Flow < 1 MGD	X 21	10	Ŧ.,	pe II:	< 10 %		
. ,,,,,, 11.	Flow 1 to 5 MGD	22	20	1 y	11، تح	10 % to < 50 %	51 52	0 20
	Flow > 5 to 10 MGI	-	30			> 50 %	53	20 30
	Flow > 10 MGD	24	50			~ JU 78	<u>ا</u> عن	ŞŲ
Type III:	Flow < 1 MGD	31	0					
·)	Flow 1 to 5 MGD	32	10					
	Flow > 5 to 10 MGI	}	20					
	Flow > 10 MGD	34	30					
	, lott - To Migb		50					
						Code Checked from	Section A or B:	21

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants:	(check one)		BOD		COD	Othe	·:		
Permit Limits: (check one)					Code	Po	ints		
		< 10	00 lbs/day		1		0		
		100 to	1000 lbs/c	lay	2		5		
			o 3000 Ibs		3		5		
		> 30	00 lbs/day	1	4	2	20		
				Code	Number Chec	cked:			N/A
				Р	oints Scored	l:			0
B. Total Suspended Solids (TSS)									
Permit Limits: (check one)					Code	Po	ints		
(2,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1,1,2,1	X	< 10	00 lbs/day		1		0		
	- 1		1000 lbs/d		2		5		
	\vdash		o 5000 lbs	-	3		15		
			00 lbs/day		4		20		
					Number Che		•		1
					oints Scored				<u> </u>
C. Nitrogen Pollutants: (check one)			Ammonia		Other:		30.		
.		A PA			Cada	D	.into		
Permit Limits: (check one)		-	en Equival		Code	PC	oints		
			00 lbs/day		1		0		
			1000 lbs/		2		5		
			o 3000 lbs		3		15		
		> 30	000 lbs/da	y	4	•	20		
				Code	Number Che	cked:			N/A
				P	oints Scored	1 :			0
				Tota	l Points Fact	or 3:			0
		- A CTO	D.A. Bui	alia Uaa	lth Impact				
					Ith Impact				
is there a public drinking water supply the receiving water is a tributary)? A ultimately get water from the above re	public drinkir	ng water :	es downs supply ma	tream of th y include i	e effluent disc nfiltration gall	charge (this eries, or oth	include any bo er methods of	ody of water conveyance	to wnich that
YES; (If yes, check toxicity poten	tial number b	elow)							
NO; (If no, go to Factor 5)									
Determine the Human Healt (Be s	sure to use th	ne Humar	n Health to	se the sam exicity grou	ie SIC doe an p column – cl	id subcatego heck one be	ory reference a low)	is in Factor	1.
Toxicity Group Code Points	i	Toxicity (Group	Code	Points	To	kicity Group	Code	Points
No process 0 0] 3	3.	3	0		7.	7	15
1. 1 0			1.	4	0		8.	8	20
2. 2 0			5.	5	5		9.	9	25
			3 .	6	10		10.	10	30
				C	ode Number (Checked:			7
				т	otal Points F	actor 4:			15

FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines or technology-based state effluent guidelines) or has a wasteload allocation been given to the discharge?

	Code	Points
X YES	1	10
NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
X YES	1	0
NO NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

YES	Code 1	:			Points 10					
X NO	2				0					
Code Number Checked:	Α	1		В	1		С	2		
Points Factor 5:	Α _	10	_ +	В	0	_ +	C	0	_ = _	10

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) 23

Check a	Check appropriate facility HPRI code (from PCS):			Enter the multiplication factor that co	orresponds to the flow code: 0.6
	HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor
	1	1	20	11, 31, or 41	0.00
				12, 32, or 42	0.05
	2	2	0	13, 33, or 43	0.10
				14 or 34	0.15
	3	3	30	21 or 51	0.10
				22 or 52	0.30
X	4	4	0	23 or 53	0.60
				24	1.00
	5	5	20		
HP	RI code ched	cked:4	-		
Base So	ore (HPRI S	core):0	X (N	Multiplication Factor)0.6 =	0

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

C. Additional Points – Great Lakes Area of Concern For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

Code	Points					Code	Points
1 2	10					1	10 0
2	0					2	0
Co	do Number Charles	٨	,	В	NI/A	·	C N/A

 Code Number Checked:
 A
 4
 B
 N/A
 C
 N/A

 Points Factor 6:
 A
 0
 +
 B
 0
 +
 C
 0
 =
 0

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	35
2	Flows / Streamflow Volume	10
3	Conventional Pollutants	0
4	Public Health Impacts	15
5	Water Quality Factors	10
6	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	70
Is the total score equal to or grater than 80 If the answer to the above questions is no.	YES; (Facility is a Major) X N would you like this facility to be discretionary major?	0
X NO YES; (Add 500 points to the above see Reason:	ore and provide reason below:	
NEW SCORE : 70 OLD SCORE : 70		
	Permit Reviewer's Name :	Anna Westernik
	Phone N umber:	703-583-3837
	Date:	April 26, 2011

VP	PDES NO. :	VA00	91464	,					Regular Additio Discretionary A Score change, I	ddition	atus Cha	ange
Fac	ility Name:	EEMA	Δ Indu	strial (Ou	ttall UU3,	1			Deletion			
	y / County:		oun Co	<u>`</u>	iiaii uuz	1		.				
	/ing Water:			anch, UT								
	h Number:			<u> </u>		······································						
mare of the second of the seco	cility a steam el he following ch output 500 MW or ar power Plant water discharge score is 600 (s	aracteris greater (i	stics? not using an 25%	a cooling po	nd/lake) ng stream's	popul YE X NO	permit for a mu ation greater th S; score is 700); (continue)	an 100,		sewer s	erving a	
				FAC	TOR 1:	Toxic Poll	itant Potent	tial				
PCS SIC	Code:		P	rimary Sic 0	Code:	9229	Other Sic Cod	des:	4961			
Industrial	Subcategory (Code:	000		_ (Code	000 if no subc	ategory)					•
Determin	e the Toxicity p	ootential	from Ap	pendix A. I	Be sure to	use the TOTA	L toxicity poten	tial colu	mn and check o	one)		
Toxicity			oints		oxicity Gro		Points		Toxicity Grou	-	Code	Points
No pro		0	0		3.	3	15		7.		7	35
waste	streams			l	} -	_					·	
X 1.		1	5		4.	4	20		8.		8	40
2.		2	10		5.	5	25		g .		9	45
					6.	6	30		10.		10	50
									Code Number	r Checke	d:	1
									Total Points	Factor	1:	5
0.		A	51a O a	(Complete	e either Se		n Flow Volu	nly one		51 6		
	ection A – Was Nastewater Typ		Flow On	-		Was	Section B – V ewater Type		ater and Stream rcent of Instream			
	see Instruction	•		Code	Points		Instructions)		Receiving	Stream L	ow Flow	
Type I:	Flow < 5 MG			11	0	-	· 100		. 40 E/		Code	Points
	Flow 5 to 10 Flow > 10 to		H	12 13	10 20	!	ype I/III:	10	< 10 %		41	0
	Flow > 10 to			14	30			10) % to < 50 % > 50%		42 43	10 20
T												
Type II:	Flow < 1 MG Flow 1 to 5 N		X	21 22	10 20		Type II:	4.0	< 10 %		51	0
	Flow > 5 to 1		\vdash	23	30			IU	% to < 50 %		52	20
	Flow > 3 to 1		-	23 24	50 50				> 50 %		53	30
<u> </u>												
Type III:	Flow < 1 MG		\vdash	31	0							
	Flow 1 to 5 N		\square	32	10							
	Flow > 5 to 1 Flow > 10 M			33 34	20 30							
	1 1044 > 10 (A)	J	Ш	J.	30							
								Code	Checked from	Section	A or B:	21
									Total P	oints Fa	ctor 2:	10

NPDES PERMIT RATING WORK SHEET FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (d	check one)		BOD		COD					
Permit Limits: (check one)					Code		Point	2		
T Girini Elitino. (Greak one)		_	100 lbs/d	lav	1		0	•		
			to 1000 lb		2		5			
	\Box		to 3000		3		15			
			3000 lbs/		4		20			
				Co	de Number Ch	ecked:				N/A
					Points Score	ed:				0
B. Total Suspended Solids (TSS)										
Permit Limits: (check one)					Code		Point	۹.		
(elicentello)	X	-	100 lbs/d	lav	1		0	-		
	1		to 1000 lb	-	2		5			
				-						
	H) to 5000 5000 lbs/	-	3 4		15 20			
			0000 100/	-	de Number Ch	ecked.	20			1
				00	Points Score					<u> </u>
C. Nitterson Dellutertes (cheek en .)			A		ı					
C. Nitrogen Pollutants: (check one)			Ammor		Other:					
Permit Limits: (check one)		Nitro	gen Equi	valent	Code		Point	s		
,			300 lbs/c		1		0			
	-		to 1000 lk		2		5			
			to 3000		3		15			
			3000 lbs/	•	4		20			
	LJ			-	de Number Ch	ecked:				N/A
				CC	Points Score					0
				-						
				10	otal Points Fac	ctor 3:			***************************************	0
	i	FACTO	OR 4: P	ublic H	ealth Impac	t				
Is there a public drinking water supply the receiving water is a tributary)? A pultimately get water from the above refu	ublic drinki erence sup	ing wate oply.								
_		,								
NO; (If no, go to Factor 5)										
Determine the Human Health (Be su					ame SIC doe a				s in Factor	1.
Toxicity Group Code Points	2 400 (y Group	Code	Points			y dy Group	Code	Points
No process 0 0			3,	3	0	[7.	7	15
waste streams			J,	J	U	l		,,	,	15
K 1. 1 0			4.	4	0			8.	8	20
2. 2 0			5.	5	5	[9.	9	25
			6.	6	10	{		10.	10	30
					Code Number	Checke	d:			1
					Total Points					0

NPDES PERMIT RATING WORK SHEET FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits besed on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines or technology-based state effluent guidelines) or has a wasteload allocation been given to the discharge?

	Code	Points
X YES	1	10
NO	2	٥

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
X YES	1	0
NO NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

	Code				Points						
YES	1				10						
X NO	2				0						
Code Number Checked:	Α	1		В	1		С	2			
Points Factor 5:	Α _	0	_ +	В	0	_ +	c _	0	_ = _	10	

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) 21

	•	cility HPRI code	•	Enter the multiplication factor that corresponds to the flow code:							
	HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor						
	1	1	20	11, 31, or 41	0.00						
				12, 32, or 42	0.05						
	2	2	0	13, 33, or 43	0.10						
_				14 or 34	0.15						
	3	3	30	21 or 51	0.10						
_				22 or 52	0.30						
	4	4	0	23 or 53	0.60						
				24	1.00						
	5	5	20								
HPF	RI code chec	ked :4	_								
e Sco	ore (HPRI Sc	ore): 0	Χ (Multiplication Factor) 0.1 =	0						

- B. Additional Points NEP Program

 For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?
- C. Additional Points Great Lakes Area of Concern For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

	Code	Points							Code		Points		
	1	10							1		10		
X	2	0	0					X	2		0		0
	C	ode Number Ch	ecked:	Α	4	_	В	N/A		С	N/A	_	
		Points Fac	ctor 6:	Α	0	_ +	В	0	+	С	٥	=	0

SCORE SUMMARY

<u>Factor</u>	Description	Total Points
1	Toxic Pollutant Potential	5
2	Flows / Streamflow Volume	10
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	10
6	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	25
X NO YES; (Add 500 points to the above score	YES; (Facility is a Major) YES; (Facility to be discretionary major?	0
NEW SCORE : 25 OLD SCORE : 25	Permit Reviewer's Name : Phone Number: Date:	Anna Westernik 703-583-3837 March 3, 2014

							X Regular Addition		
							Discretionary Add	Jitìon	
VP	DES NO. :	VA009	1464				Score change, bu	it no status Cha	nge
-	ilia. Nama		advetrial (Duffall (102)			Daletion		
	ility Name:			Outfall 003)			*0		
	y / County: /ing Water:		n County s Branch, I	IT					
	h Number:	Jenene	S Diancii,	J I					
Neac	ii Number.								
	cility a steam ele he following ch			1911) with one		ermit for a mu on greater tha	micipal separate storm s an 100,000?	ewer serving a	
1. Power o	utput 500 MW or	greater (not	using a cooling	pond/lake)	YES	score is 700	(stop here)		
2. A nuclea	ar power Plant				X NO;	(continue)			
Cooling flow rate	water discharge	greater than	25% of the reco	eiving stream's 7	Q10				
Yes;	score is 600 (s	op here)	X NO; (co	ntinue)					
			F	ACTOR 1: T	oxic Pollut	ant Potent	ial		
PCS SIC	Code:		Primary S	ic Code:	4961	Other Sic Coc	es: 9229		
Industrial	Subcategory C	ode: 0	00	(Code 0	00 if no subcate	egory)			
Determin	e the Toxicity o	otential fro	m Annendix A	Be sure to u	se the TOTAL	oxicity notent	ial column and check on	ne)	
Toxicity		id <i>e</i> Poi		Toxicity Grou		Points	Toxicity Group		Points
No pre	00000) (3.	3	15	7.	7	35
waste	streams	, .		3.	3	13	<i>'</i> .	ľ	35
X 1.		1 5	i	4.	4	20	8.	8	40
2.	:	2 1	ס	5.	5	25	9.	9	45
				6.	6	30	10.	10	50
		* K					Code Number (Checked:	1
							Total Points F	actor 1:	5
					ow/Stream tion A or Section				
Se	ection A – Wast	ewater Flo	w Only consid	lered		Section R = M	/astewater and Stream F	Flow Considered	4
٧	Vastewater Typ	е	Code	Points	Waste	vater Type structions)	Percent of Instream W		
Type I:	Flow < 5 MG	•	11	0	1000 111	31140110113)	Accounting o	Code	Points
	Flow 5 to 10	MGD	12	10	Тур	e I/III:	< 10 %	41	0
	Flow > 10 to	50 MGD	13	20			10 % to < 50 %	42	10
	Flow > 50 M	GD	14	30			> 50%	43	20
Type II:	Flow < 1 MG	D	21	10	Τ\	rpe II:	< 10 %	51	0
•	Flow 1 to 5 N	IGD	22	20	,		10 % to < 50 %	52	20
	Flow > 5 to 1	0 MGD	23	30			> 50 %	53	30
	Flow > 10 M	3D	24	50			ŀ		
Type III:	Flow < 1 MG	D	X 31	0					
	Flow 1 to 5 N		32	10					
	Flow > 5 to 1	0 MGD	33	20					
	Flow > 10 MG	3 D	34	30					
							Code Checked from S	ection A or B	31
								nts Factor 2:	

NPDES PERMIT RATING WORK SHEET FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demandin	g Pollutants: (ch	eck one)		BOD		COD	Othe	ır:		
Permit Limits: (check one)					Code	Po	oints		
,	,		< 10	00 lbs/day		1		0		
				1000 lbs/d	av	2		5		
		H ,		3000 lbs/d		3		15		
		H -		00 lbs/day	•	4				
			> 50	oo ibs/day		•		20		
						umber Chec ints Sc or ed:				N/A 0
					PUI	ilits oculeu.	•			
B. Total Suspended S	olids (TSS)									
Permit Limits: (check one)					Code	Po	oints		
		X	< 10	00 lbs/day		1		0		
				1000 lbs/d	av	2		5		
					-					
		₩ '		5000 lbs/		3		15		
			> 50	00 lbs/day ·		4		20		
						lumbar Chec				1
					Pol	ints Scored:	,			0
C. Nitrogen Pollutants	: (check one)			Ammonia	Otl	ner:				
Parmit Limits: (check one)		Nitroge	en Equivale	ent	Code	P	oints		
r diante Enrico. (Sireok one,		_		J. 7.					
		 		00 lbs/day		1		0		
				1000 lbs/d		2		5		
		<u></u>		o 3000 lbs.		3		15		
			> 30	00 lbs/day		4		20		
					Code N	lumber Chec	ked:			N/A
					Po	ints Scored:	:			0
					Total f	Points Facto	or 3:			0
		F.A	ACTOR	R 4: Pub	lic Healt	h Impact				
s there a public drinking he receiving water is a t ultimately get water from	ributary)? A pul	cated within plic drinking	n 50 mile gwater s	es downstr	ream of the	effluent disci				
YES; (If yes, check t	oxicity potantial	number be	low)							
NO; (If no, go to Fac	tor 5)									
Determine the	Human Heəlth po Be sure					SIC doe and column – ch			s in Factor 1	
Toxicity Group Co	de Points		oxicity C			oints		xicity Group	Code	Points
No process			¬ -	•				•		
waste streams	0] 3	l.	3	0		7.	7	15
1.	1 0] 4	٠.	4	0		8.	8	20
2.	2 0		5	i.	5	5		9.	9	25
] 6	i.	6	10		10.	10	30
					Cod	e Number C	hecked:			1
						al Points Fa				0
					101	gi FUIIIS Fa	OLUI 4:			

NPDES PERMIT RATING WORK SHEET FACTOR 5: Water Quality Factors

Α.	Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-
	based federal effluent guidelines or technology-based state effluent guidelines) or has a wasteload ellocation been given to the
	discharge?

	Code	Points
X YES	1	10
NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
X YES	1	0
NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

	Code				Points					
YES	1				10					
X NO	2				0					
Code Number Checked:	Α	1		В	1		С	2		
Points Factor 5:	Α _	10	_ +	В	0	_ +	С	0	=	10

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) ____31

Check a	ppropriate fa	cility HPRI code	e (from PCS):	Enter the multiplication factor that corresponds to the flow code: 0.3							
	HPRI# Code		HPRI Score	Flow Code	Multiplication Factor						
	1	1	20	11, 31, ог 41	0.00						
_				12, 32, or 42	0.05						
	2	2	0	13, 33, or 43	0.10						
_				14 or 34	0.15						
	3	3	30	21 or 51	0.10						
				22 or 52	0.30						
X	4	4	0	23 or 53	0.60						
_				24	1.00						
	5	5	20								
НР	'RI code chec	cked: 4	-								
Ba s e So	ore (HPRI So	core): 0	X (1	Multiplication Factor) 0.00 =	0						

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

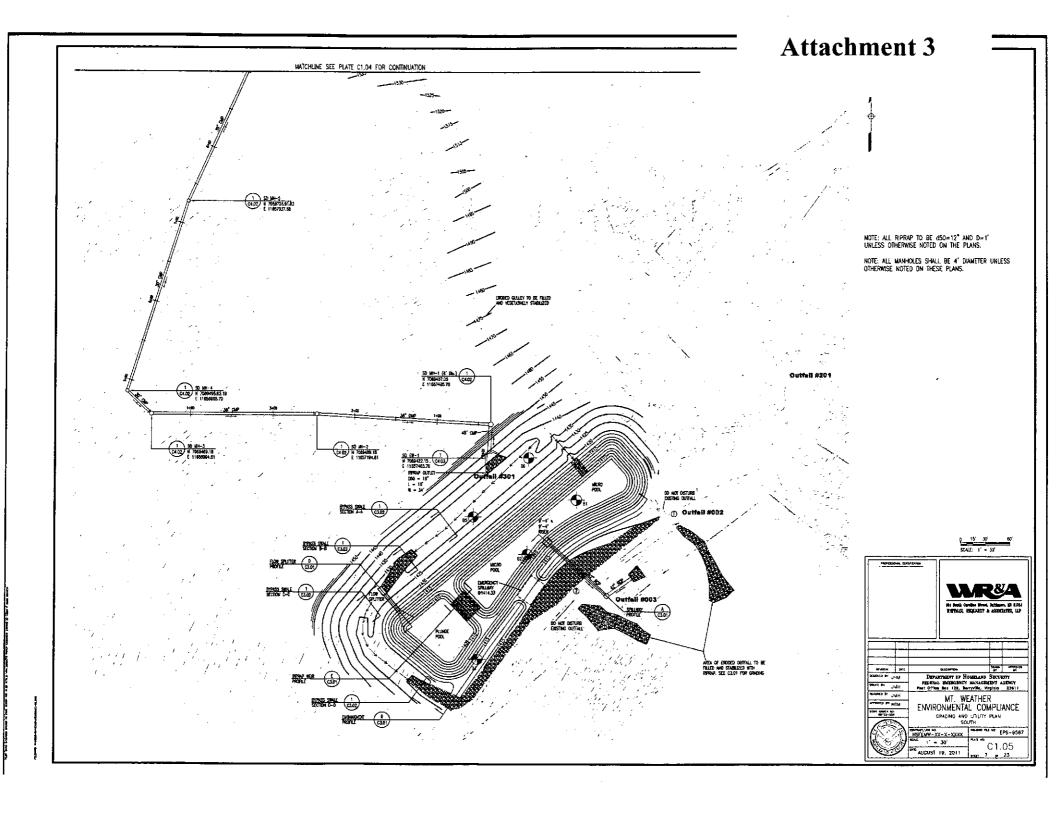
Points Factor 6:

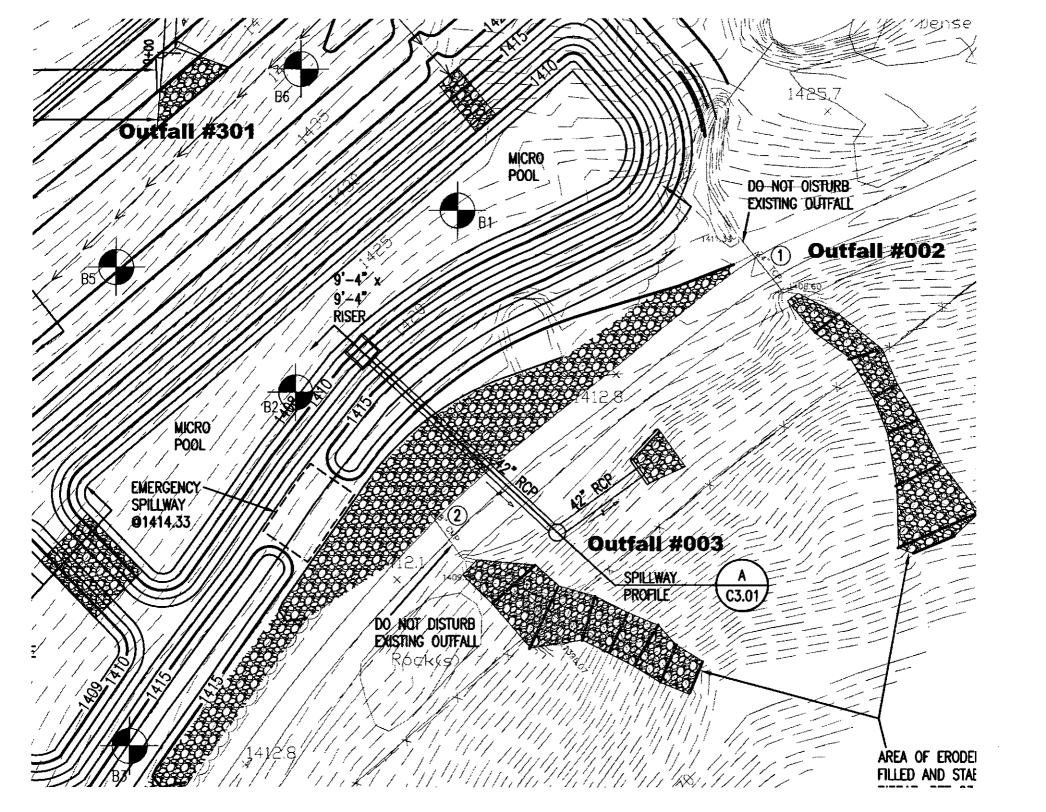
C. Additional Points – Great Lakes Area of Concern For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

	Code	Points			•			Code	F	Point s	
	1	10						1		10	
X	2	0	0				X	2		0	0
			•								
	Cod	de Number Ch	iecked:	Α	4	В	N/A		С	N/A	

SCORE SUMMARY

<u>Factor</u>		Description		<u>Total Points</u>
1		Toxic Pollutant Potential		5
2	+	Flows / Streamflow Volume		0
3		Conventional Pollutants		0
4		Public Health Impacts		0
5		Water Quality Factors		10
6		Proximity to Near Coastal Waters	0	
		TOTAL (Factors 1 through 6)		15
S1. Is the total score equal to	or grater than 80	YES; (Facility is a Major)	X NO)
	-	you like this facility to be discretiona	ar majar3	
52. If the answer to the above	questions is no, would	you like this facility to be discretioned	ry major:	
X NO		·		
X NO				
YES; (Add 500 points	to the above score and	provide reason below:		
Reason:				
<u> </u>				
NEW SCORE :15	_			
OLD SCORE : NA	-			
		Permit Review	er's Name :	Anna Westernik
		Pho	ne Number:	703-583-3837
			Date:	March 3, 2014







MEMORANDUM Northern Regional Office

TO:

File

FROM:

Anna Westernik, Water Permit Writer

DATE:

February 8, 2013

SUBJECT:

January 9, 2013 Site Inspection of U.S. FEMA Industrial in Mt. Weather, Virginia (VA0091464)

On January 9, 2013, DEQ visited the storm water outfall locations at the FEMA facility in Mt. Weather, Virginia for the purpose of modifying the industrial permit to include an additional storm water outfall on the east side of the property. Present during the inspection were Kathy Ellis, Environmental Engineer, Harold Rohde, Civil Engineer, Tim Moulton, Water Plant Operator, and myself.

FEMA is a Federal government facility located on a mountain ridge on Route 601 near Bluemont, Virginia that has been in operation since the early 1900s. The facility encompasses administrative programs, training and housing facilities, and emergency and disaster relief support.

Security was enhanced at FEMA after 2001 though construction of a perimeter road around the property. Construction of the road has caused erosion problems on the east side of the property due to the steep slopes present in the area. In order to protect waterways and farms in Upperville from sediment runoff in a storm event, a new storm water outfall with considerable detention time was installed in July 2012 to capture runoff from the east side of the property.

The newly constructed storm water outfall is directly south of the present Outfall 002. Flow from the east side of the property drains through a new manhole, enters a small pond and then a large pond for sediment capture. Both ponds are unlined. In the event the large pond does overflow, approximately 50 to 75 feet of riprap is installed outside the fence boundary to slow down flow and hence, protect the slope from further erosion. Sampling from this outfall shall occur from a culvert after the cleanout manhole and prior to discharge to the pond. If elevated levels of monitored parameters are present in the sample, resampling should occur at the property line after discharge from the large pond.

The newly constructed outfall will be named Outfall 003 and the internal process water outfall renamed Outfall 301. Approximately 90% or more of the process wastewater from the east side of the facility goes to Storm Water Outfall 003. Both outfalls receive sump pump water. Outfall 002 receives the diseharge from Outfall 201, which consists of sump and storm water from a small section of the east side of the facility. Listed below is a description of the industrial outfalls on the east side of the property.

Outfall 002

Outfall 002 receives sump and storm water from Outfall 201 and localized sheet runoff from a contiguous wooded area before discharge to an unnamed tributary of Jefferies Branch. Before the construction of the new outfalls and upgrading of the storm water discharge route, this outfall received the majority of the storm water discharges from the east side of the facility.

January 9, 2013 Site Inspection of U.S. FEMA Industrial in Mt. Weather, Virginia (VA0091464) February 8, 2013
Page 2

Outfall 201

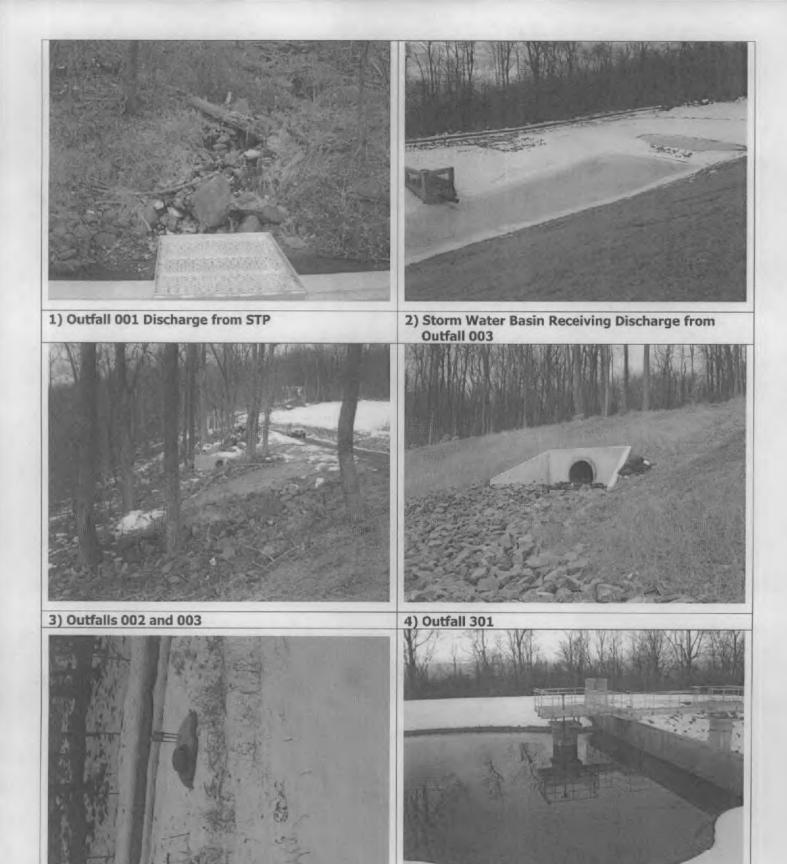
Outfall 201 receives sump water from office huildings and storm water from office buildings areas and paved surfaces (roads and parking lots) on a small section of the east side of the facility. This discharge enters a series of two ponds for treatment by aeration and sedimentation. Additional treatment is provided by two weirs in the ponds that collect oil. Siphons remove the collected oil and grease for disposal. Used liquid oil is recycled and non-liquid oil products are disposed of as hazardous waste. The volume of storm water and sump discharges from this outfall has also been reduced due to the construction of the new outfalls and the upgrading of the storm water discharge route.

Outfall 003

Outfall 003, which discharges to an unnamed tributary of Jefferies Branch where it exits the FEMA property, receives drainage from the eastern side of the property and sump and cooling water discharge. All discharge from Outfall 301 and storm water discharge from the drainage area south of Internal Outfall 301 travel through this outfall. This is a new wet weather discharge outfall.

Outfall 301 (Sump Discharge, Cooling Water Discharge, Storm Water)

Outfall 301 receives sump pump discharges, condensate from air conditioning towers, and storm water from the main complex of buildings on the eastern side of the property. These discharges enter a storm water conveyance system from the top eastern portion of the facility and are piped down the hill for treatment via sedimentation through entering a small basin that discharges into a larger basin. Effluent from Internal Outfall 301 is discharged into Storm Water Outfall 003.

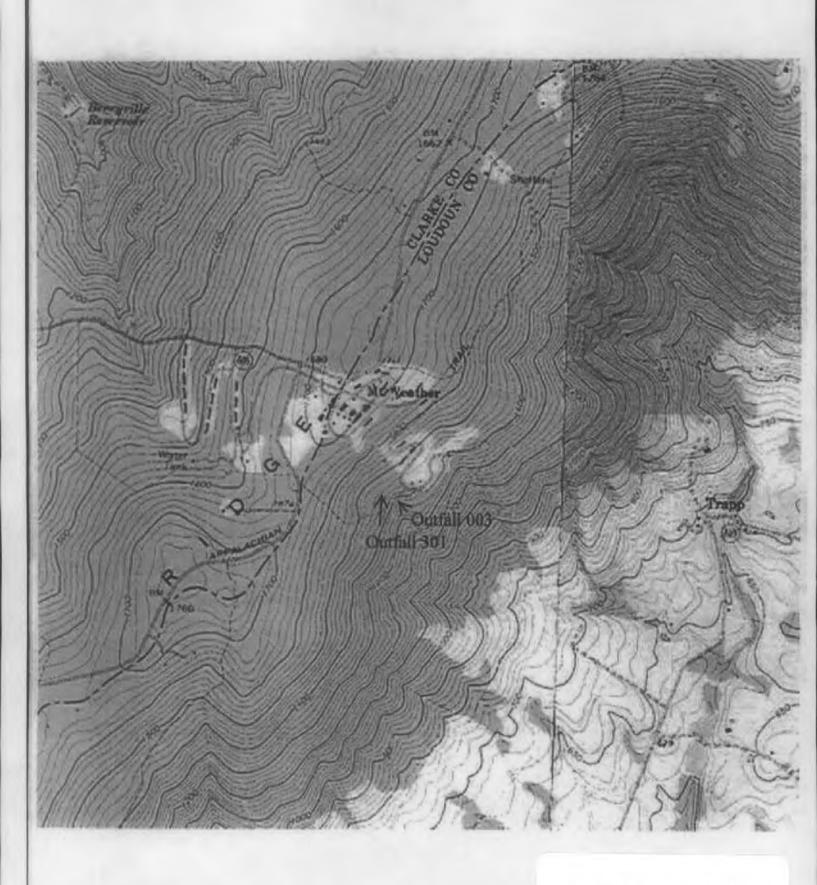


6) WTP Lagoon

Facility name: FEMA – Mt. Weather Site Inspection Date: January 9, 2013

5) Outfall 101

VPDES Permit No. VA0090464



Attachment 5

U.S. FEMA Industrial Hardness Outfall 101 (1st Quarter 2011 -- 4th Quarter 2013)

Permit No. VA0091464

DMR Due Date	Maximum Concentration (mg/L)
10-Apr-12	117
10-Jul-12	124
10-Oct-12	128
10-Jan-13	116
10-Apr-13	97.7
10-Jul-13	103
10-Oct-13	138
10-Jan-14	140
Average	120.4625

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

FEMA Industrial - Outfall 101

Permit No.: VA0091464

Receiving Stream:

Jeffries Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	121 mg/L
90% Temperature (Annual) ≃	deg C	7Q10 (Annual) =	MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	SU
10% Maximum pH =	su	30Q10 (Wet season) =	MGD	- 30Q10 Mix ⇒	100 %	10% Məximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	MGD			Discharge Flow =	0.1 MGD
Public Water Supply (PW\$) Y/N? =	n	Harmonic Mean =	MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background		Water Qua	ality Criteria			Wasteload	Allocations	-		Antidegrada	ation Baseline		А	ntidegradatio	on Allocations			Most Limiti	ng Aliocations	5
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acule	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн
Acenapthene	٥	-		па	9.9E+02			na	9.9E +02					-						na	9.9E+02
Acrolein	0	-		na	9.3E+00			na	9.3E+00					-						na	9.3E+00
Acrylonitrile ^c	0	-	-	па	2.5E+00	_	-	na	2.5E+00					_						na	2.5E+00
Aldrin ^C	0	3.0E+00		na	5.0E-04	3.0E+00	-	na	5.0E-04	-		-		-				3.0E+00		na	5.0E-04
Ammonia-N (mg/l) (Yearly) Ammonia-N (mg/l)	0	5.84E+01	7.09E+00	na		5.84E+01	7.09E+00	na			-			_				5.84E+01	7.09E+00	na	
(High Flow)	0	5,84E+01	7.09E+00	na		5.84E+01	7.09E+00	na				-		-	-			5.84E+01	7.09E+00	na	**
Anthracene	0	-		na	4.0E+04	-	-	na	4.0E+04		-			_						na	4.0E+04
Antimony	0			na	6.4E+02	-	-	na	6.4E+02					-						na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na		3.4E+02	1.5E+02	na										3.4E+02	1.5E+02	na	
Barium	0			na				na						-			**			na	-
Benzene ^c	0			na	5.1E+02	_		na	5.1E+02		-	-	-	-	-	-				na	5.1E+02
Benzidine ^c	0			na	2.0E-03			na	2.0E-03		-		-		-	-				na	2.0E-03
Benzo (a) anthracene ^c	0			na	1.8E-01			na	1.8E-01			-						-		na	1.8E-01
Benzo (b) fluoranthene ^c	0	-	-	па	1.8E-01			na	1.8E-01					-				 		na	1.8E-01
Benzo (k) fluoranthene ^c	0	-	-	na	1.8E-01		-	กล	1.8E-01		-			_				_		na	1.8E-01
Benzo (a) pyrene ^c	0		-	na	1.8E-01			na	1.8E-01					-					-	na	1.8E-01
Bis2-Chloroethyl Ether C	0			na	5.3E+00			na	5.3E+00			·						\- <u>-</u> -		na	5.3E+00
Bis2-Chloroisopropyl Ether	Đ			na	6.5E+04			na	6.5E+04				-	-	-				••	na	6.5E+04
Bis 2-Ethylhexyl Phthalate ^C	0	-		na	2.2E+01			na	2.2E+01]		n8	2.2E+01
Bromofonn ¢	٥	-	-	na	1.4E+03		-	na	1.4E+03					-		**				na	1.4E+03
Bulylbenzylphthalate	О	-		na	1.9E+03		-	na	1.9E+03					-						na	1.9E+03
Cadmium	0	4.9E+00	1.3E+00	na		4.9E+00	1.3E+00	na	-					-				4.9E+00	1.3E+00	na	
Carbon Tetrachloride ^G	0			na	1.6E+01		••	na	1.6E+01						-	_				na	1.6E+01
Chlordane ^C	Q	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	па	8.1E-03			_	_	-	_			2.4E+00	4.3E-03	na	8.1E-03
Chloride	O	8.6E+05	2.3E+05	na		8.6E+05	2.3E+05	na				_						8.6E+05	2.3E+05	na	
TRC	0	1.9E+01	1.1E+01	na	-	1.9E+01	1.1E+01	na	-					-				1.9E+01	1.1E+01	na	
Chlorobenzene	0			na	1.6E+03		-	na	1.6E+03			-		_	.,					na	1.6E+03

Parameter	Background	Water Quality Criteria			<u> </u>	Wasteloa	d Allocations	_		Antidegrada	tion Baseline		A	rtidegradation	Allocations			Most Limiti	ng Allocations	5	
(ug/l unless noted)	Conc.	Acute	1 1	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute		HH (PWS)	НН	Açule	Chronic I	H (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Chlorodibromomethane ^C	0		 -	na	1.3E+02		-	na	1.3E+02									-		na	1.3E+02
Chloreform	0			na	1.1E+04	i _		na	1,1E+04						4-					na	1.1E+04
2-Chloronaphthalene	0			na	1.6E+03			กล	1.6E+03		-									na	1.6E+03
2-Chlorophenol	0			na	1.5E+02			na	1.5E+02						-					na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na		8.3E-02	4.1E-02	na						_				8.3E-02	4.1E-02	na	
Chromium III	0	6.7E+02	8.7E+01	na		6.7E+02	8.7E+01	na	_	<u></u>								6.7E+02	8.7E+01	па	
Chromium VI	0	1.6E+01	1.1E+01	na		1.6E+01	1.1E+01	па	_									1.6E+01	1.1E+01	na	_
Chromium, Total	٥			1.0E+02			-	na												na	
Chrysene ^c	٥	ļ <u></u>		na	1.8E-02			na	1.8E-02											na	1.8E-02
Copper	0	1.6E+01	1.3E+01	na		1.6E+01	1.1E+01	na						_	_	_		1.6E+01	1.1E+01	na	_
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04									2.2E+01	5.2E+00	па	1.6E+04
DDD C	0			na	3.1E-03			na	3.1E-03											na	3.1E-03
DDE C	0	_		na	2.2E-03			na	2.2E-03						.,					na	2.2E-03
DDT c	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03		_							1.1E+00	1.0E-03	na	2.2E-03
Demeton	0		1.0E-01	na	2.22 00		1.0E-01	na			_	••	_		_	_	_		1.0E-01	na	
Diazinon	0	1 7E-01	1.7E-01	na		1.7E-01	1.7E-01	na										1.7E-01	1.7E-01	na	
Dibenz(a,h)anthracene ⁶	0		1.72-01	na	1.8E-01	1.72-01	1.75-01	na	1.8E-01		_	_	-							na	1.8E-01
1,2-Dichlorobenzene	0		_	na	1.3E+03			na	1.3E+03		_						_			na	1.3E+03
1,3-Dichlorobenzene	0	_		na	9.6E+02	"			9.6E+02	-	-					•-		"		na	9.6E+02
1.4-Dichlorobenzene	0	-	-		1.9E+02		_	na	1.9E+02											na	1.9E+02
3.3-Dichlorobenzidine ^c	0	_		na	2.8E-01	"		na	2.8E-01				_			_					2.8E-01
Dichlorobromomethane ^c	0			na	1.7E+02			na na	1.7E+02			==	-	-		_	_		-	na na	1.7E+02
1.2-Dichloroethane ^C				na		-					-	-			-	-	-		-		3.7E+02
	1			na	3.7E+02	_	_	na	3.7E+02				**	-			-			па	7.1E+03
1,1-Dichloroethylene	0	_		na	7.1E+03 1.0E+04		-	na	7.1E+03		•	-	•	-		••	_	-		na	1.0E+04
1,2-trans-dichloroethylene		-		па			-	na	1.0E+04			••	•		••			-		na	
2,4-Dichlorophenol 2,4-Dichlorophenoxy	"	_	=	na	2.9E+02			na	2.9E+02		-			_			-			US	2.9E+02
acetic acid (2.4-D)	0			na		-	_	na								-			••	na	
1,2-Dichloropropane ⁰	٥		-	na	1.5E+02	-		na	1.5E+02						-	-				na	1.5E+02
1,3-Dichloropropene ^C	0			na	2.1E+02	-	-	na	2.1E+02		-							-	•-	na	2.1E+02
Dieldrin ^c	0	2.4⊑-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04					-				2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	-		na	4.4E+04		·	na	4.4E+04					-						na	4.4E+04
2,4-Dimethylphenol	0			na	8.5E+02	-		na	8.5E+02			-		-	-					na	8.5E+02
Dimethyl Phlhalate	0			na	1.1E+06			na	1.1E+06			-		-	-	-				na	1.1E+06
Di-n-Butyl Phthalate	0		•-	na	4.5E+03	_		na	4.5E+03			-			-					na	4.5E+03
2,4 Dinitrophenol	0			na	5.3E+03			na	5.3E+03					_				-		na	5.3E+03
2-Methyl-4.6-Dinitrophenol	0	-		na	2.8E+02			па	2.8E+02		-									na	2.8E+02
2,4-Dinitrotoluene ^c Dioxin 2,3,7,8-	0			na	3.4E+01		-	па	3.4E+01	-		-								na	3.4E+01
letrachlorodibenzo-p-dioxin	0		-	na	5.1E-08	-	••	na	5.1E-08	-		-		-				-		na	5.1E-08
1,2-Diphenylhydrazine ^C	0	-	-	na	2.0E+00		-	na	2.0E+00		-	-		-	-		-			na	2.0E+00
Alpha-Endosulfan	0	2.2∈-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01				•-	-				2.2E-01	5.6E-02	na	8.9E+01
Bela-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	-		-		_				2.2E-01	5.6E-02	na	8.9E+01
Alpha + Bela Endosulfan	0	2.2E-01	5.6E-02			2.2E-01	5.6 E-02					-			-			2.2E-01	5.6E-02		
Endosulfan Sulfate	0			na	8.9E+01	-		na	8.9E+01			-			-	-				na	8.9E+01
Endrin	0	6.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	-	••		-		-			8.6E-02	3.6E-02	na	6.0E-02
Endnn Aldehyde	0			na	3.0E-01	<u> </u>		na	3.0E-01	-										na	3.0E-01

Parameter	Background		Water Quali	ly Crileria			Wasteload	Allocations			Antidegradat	tion Baseline		A	ntidegradatio	n Altocations			Most Limitin	ng Allocations	5
(ug/l unless noted)	Conc.	Acute	T	HH (PWS)	нн	Acute	Г	HH (PWS)	нн	Acute	1 1	HH (PWS)	нн	Acute		HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Ethy/benzene	0			na	2.1E+03		-	na	2.1E+03	-					-				-	na	2.1E+03
Fluoranihene	0		••	na	1.4E+02			na	1.4E+02			-						-		na	1.4E+02
Fluorene	o l			na	5.3E+03			na	5.3E+03	<u>.</u> _										na	5.3E+03
Foaming Agents				na	J.JL 700			na	.,							-		.	**	na	
Guthion	0	_	1.0E-02	na			1.0E-02	na	_						·				1.0E-02	па	
Heptachlor ^c	0	5.2E-01	3.8E-03	пá	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04		-							5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^C	o	5.2E-01	3.8E-03	лa	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	_								5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^c		J.2L-V1	3.0L-03 	ua	2.9E-03	J.ZC-01	3.0L-u3	กล	2.9E-03											na	2.9E-03
Hexachlorobutadiene ^C	0		 	กล	1.8E+02		_	na	1.8E+02			_						1		na	1.8E+02
Hexachlorocyclohexane	"			110	1.05-702		*-	na -	1.00+02	-				1						,,,_	1.02 - 02
Alpha-BHC ^C	0			na	4.9E-02			na	4.9E-02											na	4.9E-02
Hexachlorocyclohexane									•												
Beta-BHC ^C	0		-	na	1.7E-01	-	-	na	1.7E-01	-				-						na	1.7E-01
Hexachlorocyclohexane	_						•											0.55.04			1.8E+00
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01		na	1.8E+00	••		••	_		-	-		9.5E-01	••	na	
Hexachlorocyclopentadiene	0			na	1.1E+03	-		na	1.1E+03			-	-		-					na	1.1E+03
Hexachloroethane ^c	0		_	na	3.3E+01	-	-	na	3.3E+01	+		-		-		-	+-	-		Πž	3.3E+01
Hydrogen Sulfide	0		2.0E+00	па		-	2.0E+00	na	-					-		-*		-	2.0 E+0 0	N8	
Indeno (1,2.3-cd) pyrene ^c	0	-	-	na	1.8E-01			na	1.8E-01	1				-	**	••		-	-	na	1.8E-01
Iron	0			па		-	-	na		-	**	-		-				-		na	
Isophorone [©]	0			na	9.6E+03			na	9.6E+03			-		-	-			-		na	9.6E+03
Kepone	0		0.0E+00	na	••	-	0.0E+00	na				-	-	-	-	-		-	0.0E+00	na	
Lead	0	1.5E+02	1.7E+01	กอ		1.5E+02	1.7E+01	na	••			-	**	-	-	••		1.5E+02	1.7E+01	na	••
Malathion	0		1.0E-01	па		-	1.0E-01	na _		•-	**	-						-	1.0E-01	na	
Manganese	0			ла		-	-	na .	-				••	~		••		-		na	
Mercury	0	1.4E+00	7.7E-01		••	1.4E+00	7.7E-01					-		-				1.4E+00	7.7E-01		• -
Methyl Bromide	0			па	1.5E+03	-		na	1.5E+03		•-	-			-			-		na	1.5E+03
Methylene Chloride ⁰	0			na	5.9E+03			na	5.9E+03	-		-	-		-		•-	-	••	na	5.9E+03
Methoxychlor	0		3.0E-02	na		-	3.0E-02	na				-		-	-			-	3.0E-02	na	
Mirex	0		0.0E+00	na			0.0E+00	na	-	~-		-					-		0.0E+00	ถล	**
Nickel	0	2.1E+02	2.4E+01	na	4.6E+03	2.1E+02	2.4E+01	na	4.6E+03		-	-		-			-	2,1E+02	2.4E+01	па	4.6E+03
Nitrate (as N)	0	~-		na				na				-		-	-					na	*-
Nitrobenzene	0			na	6.9E+02			na	6.9E+02			-					-			na	6.9E+02
N-Nitrosodimethylamine ^c	0			na	3.0E+01		-	na	3.0E+01		••			-	-	-				na	3.0E+01
N-Nitrosodiphenylamine ^c	0			na	6.0E+01			na	6.0E+01					-						na	6.0E+01
N-Nitrosodi-n-propylamine ^C	0		-	na	5.1E+00			na	5.1E+00									-		na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00			2.8E+01	6.6E+00	na										2.8E+01	6.6E+00	กล	
Parathion	0	6.5E-02	1.3E-02	na		6.5E-02	1.3E-02	na										6.5E-02	1.3E-02	na	
PCB Total ^C	0		1.4E-02	na	6.4E-04	-	1.4E-02	na	6.4E-04							-tur			1.4E-02	na	6.4E-04
Pentachlorophenol ^c	0	7.7E-03	5,9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01			-			-			7.7E-03	5.9E-03	na	3.0E+01
Phenot	0			na	8.6E+05			na	8.6E+05							**	-	_		na	8.6E+05
Pyrene	0	-	_	na	4.0E+03			na	4.0E+03		**									na	4.0E+03
Radionuclides	0			na	_	_	_	na	_		_									กล	
Gross Alpha Activity																		-		-	
(pCi/L) Beta and Photon Activity	0			na				na						-		••	••		-	na	
(mrem/yr)	o			na				na						-	_				••	na	
Radium 226 + 228 (pCi/L)	0		**	na				па							-					na	
Uranium (ug/l)	0			na		-		na												na	••
										<u> </u>											

Parameter	Background		Water Qua	ality Criteria			Wasteload	Allocations			Antidegrada	tion Baseline		A	ntidegradatio	on Allocations			Most Limiti	ng Allocations	s
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Açute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	0	2.0E+D1	5.0E+00	na	4.2E+03	2.0E+01.	5.0E+00	เาล	4.2E+03					-				2.0E+01	5.0E+00	na	4.2E+03
Silver	0	4.8E+00		ua		4.8E+00		na	_				••	-				4.8E+00		na	
Sulfate	0			na				na							-					na	.
1.1,2,2-Tetrachloroelhane ^C	0			na	4.0E+01			na	4.0E+01							••	•-			na	4.0E+01
Tetrachloroethylene [©]	0		-	na	3.3E+01			na	3.3E+01			-			-			ļ		na	3.3E+01
Thallium	0	-	-	na	4.7E-01		-	na	4.7E-01	-							••		••	na	4.7E-01
Toluene	0	-		na	6.0E+03			na	6.0E+03											na	6.0E+03
Total dissolved solids	0		-	na				na		••		••								na	-
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E+01	2.0E-04	na	2.8E-03							-		7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.5E-01	7.2E-02	na		4.6E-01	7.2E-02	na								-	••	4.6E-01	7.2E-02	na	
1,2,4-Trichlorobenzene	0			na	7.0E+01			na	7.0E+01	••	••	••	-						••	na	7.0E+01
1,1,2-Trichloroe!hane ^C	0	_	••	na	1.6E+02		-	na	1.6E+02											ná	1.6E+02
Trichloroethylene ^c	0			na	3.0E+02		-	na	3.0E+02		·	-						_	-	na	3.0E+02
2,4,6-Trichlorophenol ^C	0			na	2.4E+01	_	-	na	2.4E+01			-							••	na	2.4E+01
2-(2,4,5-Trichlorophenoxy)	n			0.7			_	22										ŀ			
propionic acid (Silvex) Vinyl Chloride ^C	n o			na	2.4E+01	_	-	0.3	2.4E+01		-		_		_	_		"	•-	na	 2.4E+01
Zinc	0	1.4E+02	1.4E+02	na	2.6E+04	1.48+02	 1.4E+02	na	2.4E+01 2.6E+04		-	-	-		-	-		1.4E+02	 1.4E+02	na	2.6E+04

Notes:

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background cond.) + background cond.) for acute and chronic
 - = (0.1(WQC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	7.9E-01
Chromium III	5.2E+01
Chromium VI	6.4E+00
Copper	6.3E+00
∤ron	na
Lead	1.0E+01
Manganese	na
Mercury	4 6E-01
Nickel	1.4E+01
Selenium	3.0E+00
Silver	1.9E+00
Zinc	5.5E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Total Recoverable Copper Effluent Values -- Outfall 101 U.S. FEMA Bluemont -- VA0091464 1st Quarter 2012 -- 1st Quarter 2014

Due	CONC MAX
10-Apr-12	<ql< td=""></ql<>
10-Jul-12	<ql< td=""></ql<>
10-Oct-12	<ql< td=""></ql<>
10-Jan-13	<ql< td=""></ql<>
10-Apr-13	<ql< td=""></ql<>
10-Jul-13	<ql< td=""></ql<>
10-Oct-13	<ql< td=""></ql<>
10-Jan-14	<5.0
10-Apr-14	<ql< td=""></ql<>

 $QL = 5 \mu g/L$

U.S. FEMA Industrial Hardness Outfall 201 (1st Quarter 2011 -- 4th Quarter 2013)

Permit No. VA0091464

DMR Due Date	Maximum Concentration (μg/L)
10-Арг-12	510
10-Jul-12	4 71
10-Oct-12	439
10- Ja n-13	407
10- A pr-13	. 95.6
10-Jul-13	538
10-Oct-13	539
10-Jan-14	456
Average	431.95

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

FEMA Industrial--Outfalls 002/201

Permit No.: VA0091464

Receiving Stream:

Early Life Stages Present Y/N? =

Jeffries Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) ≔	MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCQ3) =	400 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	\$U
10% Maximum pH =	SU	30Q10 (Wet season) =	MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) ≈	1	30Q5 =	MGD			Discharge Flow =	0.1 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	MGD				
Trout Present Y/N? =	n						

Parameter	Background		Water Our	ality Criteria			Wasteloa	ad Allocations	,		Antidegrad	dation Baseline	3		Antidegrada'	ition Allocations	5		Most Limiti	ing Allocations	s
(ug/i unless noted)	Conc.	Acute	Chronic	HH (PWS)) нн	Acute	Chronic	HH (PWS)) нн	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн
Acenapthene	0		_	na	9.9E+02			na	9.9E+02											na	9.9E+02
Acrolein	0	-	-	na	9.3E+00			na	9.3E+00	1 -										na	9.3E+00
Acrylonitrile ^C	0	-	-	па	2.5E+00			na	2.5E+00	1 -									-	na	2.5E+00
Aldrin ^c Ammonia-N (mg/l)	0	3,0E+00		na	5.0E-04	3.0E+00	l ==	na	5.0E-04			-					-	3.0E+00		Na	5.0E-04
(Yearly) Ammonia-N (mg/l)	0	5.84E+01								-				-			-	5.84E+01	7.09E+00	na	-
(High Flow)	0	5.84E+01	7.09E+00	0 na			7.09E+00	o na		-		-	-	-	-	-		5.84E+01	7.09E+00	na	-
Anthracene	0			na	4.0E+04			na	4.0E+04	1 -		-	'	-	-					n8	4.0E+04
Antimony	0	-	-	na	6.4E+02		-	na	6.4E+02	-	-	-	•-				**			na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na		3.4E+02	1.5E+ 0 2	na	-	1				-		**		3.4E+02	1.5E+02	na	-
Barium	0	-		na	-	-		na		1 -		-	- '	-						na	-
Benzene ^C	0			па	5.1E+02	-		na	5.1E+02	1 -			-		-	~			-	па	5.1E+02
Benzidine ^C	0			na	2.0E-03			na	2.0E-03	1 -			- '				-			na	2.0E-03
Benzo (a) anthracene ^c	0		-	na	1.8E-01	_		па	1.8E-01	1 -			-	-	-	-		••	**	na	1.8E-01
Benzo (b) fluoranthene ^C	o i	-	_	na	1.8E-01			na	1.8E-01	1 -				-			_		**	na	1.8E-01
Benzo (k) fluoranthene ^c	0		-	na	1.8E-01	-		na	1.8E-01	1 -				-			-		-	na	1.8E-01
Benzo (a) pyrene ^c	0			na	1.8E-01			na	1.8E-01	1 -				-			-			na	1.8E-01
Bis2-Chloroethyl Ether ^c	0			na	5,3E+00			na	5.3E+00	1 -			'		-		-			na	5.3E+00
Bis2-Chloroisopropyl Ether	0			па	6.5E+04			na	6.5E+04				-			-		-		na	6.5E+04
Bis 2-Ethylhexyl Phthalate ^c	0			na	2.2E+01	-		na	2.2E+01	1 -							-			na	2.2E+01
Bromoform ^C	0	-	-	na	1.4E+03	-	-	na	1.4E+03	1 -				-			-			na	1.4E+03
Butylbenzylphthalate	0	ĺ -		na	1.9E+03		-	na	1.9E+03	1 -				-			-		-	na	1.9E+03
Cadmium	0	1.9E+01	3.4E+00	na		1.9E+01	3.4E+00	na		1 -					_		_	1.9E+01	3.4E+00	na	-
Carbon Tetrachloride C	0			na	1.6E+01		-	na	1.6E+01	1										na	1.6E+01
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	B.1E-03	-	_		'		_	-		2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	กล		8.6E+05	2.3E+05	na	[-				8.6E+05	2.3E+05	na	-
TRC	0	1.9E+01	1.1E+01	na	- 1	1.9E+01	1.1E+01	na	- [1 -	_			_				1.9E+01	1.1E+01	na	
Chlorobenzene	0	_	-	na	1.6E+03	1		na	1.6E+03	-	_			_						na	1.6E+03

Parameter	Background	ckground Water Quality Criteria						I Allocations			Antidegradati	ion Baseline		Aı	ntidegradation Allocat	ions		Most Limitin	g Allocations	s .
(ug/i unless noted)	Conc.	Acute	T	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	T T	HH (PWS)	НН	Acute	Chronic HH (PW		Acute	Chronic	HH (PWS)	нн
Chlorodibromomelhane ^C	0	Acute	- CHIOTHE	na na	1.3E+02			na	1.3E+02	-									na	1.3E+02
Chloroform	0	_		na	1.1E+04			na	1,1E+04			-		_					na	1.1E+04
2-Chloronaphthalene	o			na	1.6E+03			na	1.6E+03			_	_						na	1.6E+03
2-Chlorophenol	0			na	1.5E+02			na	1.5E+02			_	_						na	1.5E+02
Chlorpyrifos	0	8,3E-02	4.1E-02	na		8 3E-02	4.1E-02	na			_	_	_				8.3E-02	4.1E-02	na	
Chromium III	0	1.8E+03	2.3E+02	na		1.8E+03	2.3E+02	na	_					_			1.8E+03	2.3E+02	na	_
Chromium VI	0	1.6E+01	1.1E+01	na		1.6E+01	1.1E+01	na									1.6E+01	1.1E+01	na .	_
Chromium, Total	0			1.0E+02	***			na											na	- 1
Chrysene ^c	0			na	1.8E-02			na	1.8E-02										na	1.8E-02
Copper	0	5.0E+01	2.9E+01	na		5.0E+01	2.9E+01	na					_				5.0E+01	2.9E+01	na	
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04		<u></u>	_		_		<u></u>	2.2E+01	5.2E+00	na	1.6E+04
DDD c	0	-	-	na	3.1E-03		_	na	3.1E-03			-							na	3.1E-03
DDE ¢	0	_	_	na	2.2E-03		_	na	2.2E-03		_								na	2.2E-03
DDT C	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03			_					1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	1.12.00	1.0E-01	na			1.0E-01	na				_						1.0E-01	na	
Diazinon	0	1.7E-01	1.7E-01	na		1.7层-01	1.7E-01	na		_		_				<u></u>	1.7E-01	1.7E-01	na	
Dibenz(a,h)anthracene ^c	0	1,72-01		па	1.8E-01	-	-	na	1.8E-01			_		_					na	1.8E-01
1,2-Dichlorobenzene	0		_	na	1.3E+03	_	_	na	1.3E+03			_							na	1.3E+03
1,3-Dichlorobenzene	0		_	па	9.6E+02		-	na	9.6E+02		_	_		_					na	9.6E+02
1,4-Dichlorobenzene	0	_	-	na	1.9E+02		_	na	1.9E+02										na	1.9E+02
3,3-Dichlorobenzidine ^C	0		-	na	2.8E-01		-	na	2.8E-01	-			_						na	2.8E-01
Dichlorobromomethane ^C	0				1.7E+02	<u> </u>	_	na	1.7E+02		-	_	_						na	1.7E+02
1,2-Dichloroethane ^C	0			па	3.7E+02			na	3.7E+02		-	-		-					na	3.7E+02
1,1-Dichloroethylene	0		-	na na	7.1E+03	-		na	7.1E+03	-		-							na	7.1E+03
1	0	_			1.0E+04	_			1.0E+04		••	-		-				-	па	1.0E+04
1,2-trans-dichloroethylene	0		-	na	2.9E+02			na	2.9E+02		_	==		-		 			na	2.9E+02
2,4-Dichlorophenal 2,4-Dichlorophenoxy	0		•-	na	2.95702	_	-	na	2.96+02		••	-		_			-	-	II a	2.56-02
acetic acid (2,4-D)	0			na		-		na				-	-	-					na	
1,2-Dichloropropane ^C	0	**	==	na	1.5E+02			na	1.5E+02				-	-				**	na	1.5E+02
1,3-Dichloropropene ^C	0			na	2.1E+02	-	-	na	2.1E+02		**			-					na	2.1E+02
Dieldrin ^C	0	2.4E·01	5.6E-02	na	5.4E-04	2 4E-01	5.6E-02	na	5.4E-04	-				-			2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	-	-	na	4.4E+04		-	na	4.4E+04	-		-				-			na	4.4E+04
2,4-Dimethylphenol	0		-	na	8.5E+02	-	-	na	8.5E+02										na	8.5E+02
Dimethyl Phthalate	0			na	1.1E+06	-	-	na	1,1E+06				-	-	- -				na	1.1E+06
Di-n-Butyl Phthalate	0			na	4.5E+03	-		na	4.5E+03				_						na	4.5E+03
2,4 Dinitrophenol	0			na	5.3E+03	-		na	5.3E+03					-					na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	_	-	na	2.8E+02			na	2.8E+02									-	na	2.8E+02
2,4-Dinitrotoluene ^c Dioxin 2,3,7,8-	0			па	3.4E+01	-	-	na	3.4E+01										Bu	3.4E+01
tetrachlorodibenzo-p-dioxin	0			na	5.1E-08	_		na	5.1E-08		-		-	-				-	na	5.1E-08
1,2-Diphenylhydrazine ^c	0	_	-	na	2.0E+00		-	na	2.0E+00	-				-		***		-	na	2.0E+00
Alpha-Endosulfan	0	2,2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	-	-						2.2E-01	5.6E-02	па	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01		-	-	-				2.2E-01	5.6€-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02			2.2E-01	5.6E-02	-									2.2E-01	5.6E-02	-	
Endosulfan Sulfale	0			na	8.9E+01	-		na	8.9E+01									••	па	8.9E+01
Endrin	. 0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	-							8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	_		na	3.0E-01	-	-	na	3.0E-01	-				_					ла	3.0E-01

Parameter	Background		Water Qua	lity Criteria		1	Wasteload	d Allocations			Antidegrada	tion Baseline		-	Intidegradation	Allocations			Most Limit	ing Allocations	
(ug/i unless noted)	Conc.	Acute	1 1	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acute	Chronic I	H (PWS)	нн	Acute	Chronic	HH (PWS)	нн
Ethylbenzene	0			na	2.1E+03			na	2.1E+03			-,			-			<u> </u>		na	2.1E+03
Fluoranthene	0			na	1.4E+02	<u> </u>		na	1.4E+02			_		_		_				na	1.4E+02
Fluorene	0			na	5.3E+03		_	na	5,3E+03			_			_	-				na	5.3E+03
Foaming Agents	0			na	5.52.105		_	na				_	_			_		ļ <u></u>		na [.]	
Guthion	0		1.0E-02	na	-		1.0E-02	us				_			_				1.0E-02	na	
Heptachlor ^C	٥	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04			_			-	-		5.2E-01	3.8E-03	na	7.9E-04
Heptachior Epoxide ^C	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03		3.9E-04		-							5.2E-01	3.8E-03		3.9E-04
Hexachlorobenzene ^C	0						3.0E-U3	na			-	-								na	
Hexachlorobutadiene ^C				na	2.9E-03	-	-	na	2.9E-03		-	-		-		-	••	"	••	na	2.9E-03
Hexachlorocyclohexane	0		-	na	1.8E+02	_		na	1.8E+02		-	-	-	_	_	-		-		na	1.8E+02
Alpha-BHC ^C	0			na	4.9E-02	l <u></u>		па	4.9E-02					_						па	4.9E-02
Hexachiorocyclohexane					1.02 02			1164	1.02.02									İ			
Beta-BHC ^C	0		-	па	1.7E-01			na	1.7E-01								•-			па	1.7E-01
Hexachlorocyclohexane						1															
Gamma-BHC ^C (Lindane)	o e	9.5E-01	na	na	1.8E+00	9.5E-01	-	na	1.8E+00			-	-	-	-		-	9.5E-01		na	1.8E+00
Hexachlorocyclopentadiene	٥			na	1.1E+03			na	1.1E+03			-	-		-	-		-		na	1.1E+03
Hexachloroethane ^c	0			na	3.3E+01	_	-	na	3.3E+01		-	-		-	-		-	-		na	3.3E+01
Hydrogen Sulfide	0	-	2.0E+00	na	-	-	2.0E+00	na	-	-		**		-					2.0E+00	na	
Indeno (1.2,3-cd) pyrene ^c	0		-	па	1.8E-01		•-	na	1.8E-01			-		-				-		na	1.8E-01
Iran	0			na	-		-	na			-		**	-	-					na	
Isophorone ^C	0			па	9.6E+03	-	-	na	9.6E+03			-	-	-	_	-				па	9.6E+03
Kepone	a		0.0E+00	na	-	_	0.0E+00	na				-	_		-	-			0.0E+00	na	-
Lead	0	6.9E+02	7.9E+01	na		6.9E+02	7.9E+01	na						_				6.9E+02	7.9E+01	na	
Malathion	0		1.0E-01	па	-	_	1.0E-01	na	_					_				_	1.0E-01	па	
Manganese	0		_	na				na						_				_		na	
Mercury	0	1.4E+00	7.7E-01			1.4E+00	7.7E-01						_			_		1.4E+00	7.7E-01		
Methyl Bromide	0			na	1.5E+03			na	1.5E+03			_	_	_	_	_				na	1.5E+03
Methylene Chloride ^C	0			na	5.9E+03			na	5.9E+03				_		_					na .	5.9E+03
Methoxychlor	0		3.0E-02	na			3.0E-02	na						_		_			3.0E-02	na	
Mirex	0		0.0E+00	na			0.0E+00	па	_										0.0E+00	па	
Nickel	0	5.9E+02	6.5E+01	na	4.6E+03	5.9E+02	6.5E+01	na	4.6E+03					_				5.9E+02	6.5E+01	na	4.6E+03
Nitrate (as N)	0	0.82102				0.52+02	6.3E+01			-								5.52.42			
1 ' '		-		na		<u> </u>		na			-	-		_		-		_		na	
Nitrobenzene N-Nitrosodimethylamine ^c	0			па	6.9E+02	-	-	na	6.9E+02			-	-	-	-	~	••	-		na	6.9E+02
N-Nitrosodiphenylamine ^C	0			na	3.0E+01	_		na	3.0E+01			-	-		-			_		na	3.0E+01
	0		• -	na	6.0E+01	1	_	na	6.0E+01		-			-				-		na	6.0E+01
N-Nitrosodi-n-propylamine ^c	0		-	па	5.1E+00			na	5.1E+00					_				-		na	5.1E+00
Nonyiphenoi	0	2.8E+01	6.6E+00	-		2.8E+01	6.6E+00	na	-									2.8E+01	6.6E+00	па	-
Parathion	0	6.5E-02	1.3E-02	na		6.5E-02	1.3E-02	na	-									6.5E-02	1.3E-02	na	-
PCB Total ^G	0		1.4E-02	na	6.4E-04	-	1.45-02	na	6.4E-04		••		-		••	-			1.4E-02	na	6.4E-04
Pentachiorophenol ^C	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01			-			••			7.7E-03	5.9E-03	na	3.0E+01
Phenol	0			na	8.6E+05		-	na	8.6E+05											na	8.6E+05
Pyrene	0		-	па	4.0E+03		-	na	4.0E+03			**		-				-		na	4.0E+03
Radionuclides	0		-	па				na	-			-						-		па	
Gross Alpha Activity (pCi/L)	0			ne.				50													
Beta and Photon Activity	,		••	па		_	-	na		_		-	_	_	-		-			na	-
(mrem/yr)	О			na				na				-	-	-						па	
Radium 226 + 228 (pCi/L)	0			na				na					-							па	
Uranium (ug/l)	0			па	-	-		na					_	_						па	

Paremeter	Background		Water Qua	elity Criteria			Wasteload	Allocations			Antidegrada	ition Baseline		1	ntidegradat	on Allocations			Most Limiti	ng Allocations	
(ug/l unless nated)	Conc.	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	Chranic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	. 0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03									2.0E+01	5.0E+00	na sn	4.2E+03
Silver	0	3.7E+01		na		3.7E+01	-	na				-	-					3.7E+01		กล	
Sulfate	0			na		-	-	na							-	-				na	
1.1,2,2-Tetrachloroethane ^C	0			na	4.0E+01	-		na	4.0E+01				-	-	-	-				na	4.0E+01
Tetrachloroethylene ^C	0			па	3.3E+01			na	3.3E+01				••							na	3.3E+01
Thallium	0			na	4.7E-01		-	na	4.7E-01		-									na	4.7E-01
Toluene	0		-	na	6.0E+03			na	6.0E+03				•-						-	na	6.0E+03
Total dissolved solids	0			na			-	na				-		-				-		na	-
Toxaphene [©]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03					-		-		7.3E-01	2.0E-04	na	2.8E-03
Tributyllin	0	4.6E-01	7.2E-02	na		4.6E-01	7.2E-02	na					-		-	-		4.6E-01	7.2E-02	na	
1,2,4-Trichlorobenzene	0			na	7.0E+01		-	na	7.0E+01		-									na	7.0E+01
1,1,2-Trichloroethane ^C	0			лa	1.6E+02			na	1.6E+02		-			-					••	na	1.6E+02
Trichloroethylene ^C	0		-	กล	3.0E+02		-	na	3.0E+02		-									na	3.0E+02
2,4,6-Trichlorophenol ^c	0			na	2.4E+01	-		na	2.4E+01			-				***	-			na	2.4E+01
2-(2.4,5-Trichlorophenoxy) propionic acid (Silvex)	a	***		na		_		na				-	-		_	-				na	
Vinyl Chloride ^C	0			na	2.4E+01			വക	2.4E+01						-	-				па	2.4E+01
Zinc	0	3.8E+02	3.8E+02	na	2.6E+04	3.8E+02	3.8E+02	na	2.6E+04							-		3.8E+02	3.8E+02	па	2.6E+04

Notes:

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
 Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background conc.) + background conc.) for acute and chronic
 - = (0.1(WQC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)]
Antimony	6.4E+02	1
Arsenic	9.0E+01	ŀ
Barium	na	l
Cadmium	2.0E+00	l
Chromium III	1.4E+02	l
Chromium VI	6.4E+00	l
Copper	1.8E+01	l
Iron	na	l
Lead	4.7E+01	l
Manganese	na	l
Mercury	4.6E-01	l
Nickel	3.9E+01	l
Selenium	3.0E+00	l
Silver	1.5E+01	١
Zinc	1.5E+02	

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Total Recoverable Copper Effluent Values -- Outfall 201 U.S. FEMA Bluemont -- VA0091464 1st Quarter 2012 -- 1st Quarter 2014

Due	CONC MAX
10-Apr-12	9.1
10-Jul-12	15.4
10-Oct-12	<ql< td=""></ql<>
10-Jan-13	<ql< td=""></ql<>
10- A pr-13	<ql< td=""></ql<>
10-Jul-13	<ql< td=""></ql<>
10-Oct-13	<ql< td=""></ql<>
10-Jan-14	12.1
10-Apr-14	6.1

4/30/2014 5:35:28 PM

```
Facility = U.S. FEMA Industrial -- Outfall 201
Chemical = Copper
Chronic averaging period = 4
WLAa = 50
WLAc = 29
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1
```

Summary of Statistics:

```
# observations = 4
Expected Value = 10.675
Variance = 41.0240
C.V. = 0.6
97th percentile daily values = 25.9767
97th percentile 4 day average = 17.7609
97th percentile 30 day average = 12.8746
# < Q.L. = 0
Model used = BPJ Assumptions, type 2 data
```

No Limit is required for this material

The data are:

9.1 15.4 12.1 6.1

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

FEMA Industrial -- Outfall 003

Permit No.: VA0091464

Receiving Stream:

Jefferies Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	0 %	Mean Hardness (as CaCO3) =	120 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	0 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	0 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	0 %	90% Maximum pH =	SU
10% Maximum pH =	SU	30Q10 (Wet season)	0 MGD	- 30Q10 Mix =	0 %	10% Maximum pH =	SU
Tier Qesignation (1 or 2) =	1	30Q5 =	0 MGD			Oischarge Flow =	0.1 MGO
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Lite Stages Present Y/N? =	у						

Parameter	Background		Waler Qual	lity Criteria			Wasteload	Allocations			Antidegrada	ilion Baseline		А	ntidegradati	on Allocations			Most Limiti	ng Allocation	S
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PW\$)	нн	Acute	Chronic	HH (PWS)	HH.	Acute	Chronic	HH (PWS)	НН
Acenapthene	р			na	9.9E+02			na	9.9E+02											na	9.9E+02
Acrolein	0	-		па	9.3E+00			na	9.3E+00		_						*-			na	9.3E+00
Acrylonitrile ^C	0	-	-	na	2.5E+00			na	2.5E+00					_						na	2.5E+00
Aldrin ^C	0	3.0E+00		กล	5.0E-04	3.0E+00	-	na	5.0E-04		-	-		-				3.0E+00		na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	5.84E+01	7.09E+00	na		5.84E+01	7.09E+00	na			_							5.84E+01	7.09E+00	na	
Ammonia-N (mg/l)	· ·	G.042 101	7.USL-UU	110		J.DAETOT	7.082-00	i i a	-,						-			J.042.01	7.002.00	,,,,	-
(High Flow)	0	5.84E+01	7.09E+00	na		5.84E+01	7.09E.+00	na		-			-	-	-	-		5.84E+01	7.09E+00	na	••
Anthracene	0			na	4.0E+04	-	**	na	4.0E+04	-		-	_	-	-	-			**	na	4.0E+04
Antimony	0		-	na	6.4E+02	-		na .	6.4E+02	-		•-							**	na	6.4E+02
Arsenic	٥	3.4E+02	1.5E+02	na		3.4E+02	1.5E+02	na										3.4E+02	1.5E+02	na	
Barium	0			na		-		na				_								na	
Benzene ^C	0			na	5.1E+02	-		na	5.1E+02			-			~	-				na	5.1E+02
Benzídine ^C	0			na	2.0E-03			na	2.0E-03			_			-				••	na	2.0E-03
Benzo (a) anthracene ^c	0			na	1.8E-01			na	1.8E-01							-			**	na	1.8E-01
Benzo (b) fluoranthene ^c	0		-	па	1.8E-01		-	na	1.8E-01	-										na	1.8E-01
Benzo (k) fluoranthene ^c	0	_	-	na	1.8E-01	-	_	na	1.8E-01	-									**	រាង	1.8E-01
Benzo (a) pyrene ^c	0			na	1.8E-01			na	1.8E-01			-		-						กล	1.8E-01
Bis2-Chloroethyl Ether ^c	0			na	5.3E+00	_		na	5.3E+00				-			**				na	5.3E+00
Bis2-Chloroisopropyl Ether	0			na	6.5E+04	_		na	6.5E+04	-		-								กล	6.5E+04
Bis 2-Ethylhexyl Phthalate ^c	0			na	2.2E+01		_	na	2.2E+01	-		-			-					na	2.2E+01
Bromoform ^C	o	-		na	1.4E+03			na	1.4E+03											na	1.4E+03
Butylbenzylphthalate	0		_	na	1.9E+03		_	na	1.9E+03											na	1.9E+03
Gadmium	c	4.8E+00	1.3E+00	na		4.8E+00	1,36+00	na		-								4.8E+00	1.3E+00	na	-
Carbon Tetrachloride ^C	0			na	1.5E+01	٠ -		na	1,6E+01	-		-			_					na	1.6E+01
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03			- 3,	<u>.</u> . —		-	_	7500	2.4E+00	4.3E-03	na	8,1E-03
Chloride	o	8.6E+05	2.3E+05	na		8.6E+05	2.3E+05	na				- ' '						8.6E+05	2.3E+05	na	
TRC	0	1.9E+01	1.1E+01	na		1 9E+01	1.1E+01	na		_								1.9E+01	1.1E+01	na	
Chlorobenzene	0			na	1.6E+03			na	1.6E+03											na	1.6E+03

Parameter	Background		Water Qua	ality Criteria			Wasteload	Allocations			Antidegradat	tion Baseline		А	ntidegradatio	on Allocations			Most Limitin	ng Allocations	
(ug/l unless noted)	Conc.	Acute	Chrenic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн	Acute	T T	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Chlorodibromomethane ^c	0			na	1.3E+02	_		na	1.3E+02	_	**						-	-	<u></u>	na	1.3E+02
Chloroform	0			na	1.1E+04	-	_	na	1.1E+04					_						na	1.1E+04
2-Chloronaphthalene	0		··•	na	1.6E+03			na	1.6E+03						_	_				na	1.6E+03
2-Chlorophenol	0			na	1.5E+02			na	1.5E+02					_						na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na		8.3E-02	4.1E-02	na						_				8.3E-02	4.1E-02	па	
Chromium (II	0	6.6E+02	8.5E+01	ла		6.6E+02	8.6E+01	na		-		_		_			-	6.6E+02	8.6E+01	na	
Chromium VI	0	1.6E+01	1.1E+01	па	-	1.6E+01	1.1E+01	na	_	-								1.6E+01	1.1E+01	ла	_
Chromium, Total	0	-		1.0E+02				na												na	
Chrysene [©]	0			na	1.8E-02		_	na	1.8E-02			_				-				na	1.8E-02
Copper	0	1.6E+01	1.0E+01	na	_	1.6E+01	1.0E+01	na				_	-			_		1.6E+01	1.0E+01	na	-
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	-				.,				2,25,+01	5.2E+00	na	1.6E+04
000 c	0		-	па	3.1E-03			na	3.1E-03											па	3.1E-03
DOE ¢	0			na	2 2E-03		_	na	2.2E-03					- -						na	2.2E-03
DDT ^G	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03			_						1.1E+00	1.0E-03	na	2.2E-03
Demeton	0		1.0E-01	na	_		1.0E-01	na				_	_		_	_			1.0E-01	na	
Diazinon	0	1.7E-01	1,7E-01	na		1.7E-01	1.7E-01	na				_						1.7E-01	1.7E-01	na	
Dibenz(a,h)anthracene ^C	0			na	1.8E-01		-	na	1.8E-01											па	1.8E-01
1,2-Dichlorobenzene	0	_	_	na	1.3E+03			na	1.3E+03											na	1.3E+03
1,3-Dichlorobenzene	0	_	_	na	9.6E+02			na	9.6⊑+02					_						na	9.6E+02
1,4-Dichlorobenzene	0		-	na	1.9E+02			na	1.9E+02			_	_					ļ		na	1.9E+02
3,3-Dichlorobenzidine ^c	0			na	2.8E-01			na	2.8E-01	_		_	_			710		<u></u>		na	2.8E-01
Dichlorobromomethane ^c	0			па	1.7E+02	_		na	1.7E+02											na	1.7E+02
1,2-Dichloroethane ^C	0		**	па	3.7E+02		_	na	3.7E+02									!		na	3.7E+02
1,1-Dichloroethylene	0		_	na	7.1E+03		_	na	7.1E+03		_	_								na	7.1E+03
1,2-trans-dichlorgethylene	0		_	na	1.0E+04		 	na	1.0E+04	_									-	na	1.0E+04
2,4-Dichlarophenal	0			na	2.9E+02	-		na	2.9E+02										_	na	2.9E+02
2,4-Dichlorophenoxy				110	2.92.02		_	110	2.32.02	_		-	_					"	•		2.02.02
acelic acid (2,4-D)	0			na				na				-	-	-	-	-				na	
1.2-Dichloropropane ^C	0			na	1.5E+02	-		na	1.5E+02				-	••				-		na	1.5E+02
1,3-Dichloropropene ^C	0			na	2.1E+02		-	na	2.1E+02			-					**	-		na	2.1E+02
Dieldrin [¢]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04		••				••			2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	-	-	na	4.4E+04		-	na	4.4E+04									-		na	4.4E+04
2,4-Dimethylphenol	0			na	8.5E+02	-		na	8.5E+02	-		-						-		па	8.5E+02
Dimethyl Phthalate	0			na	1:1E+06	-	-	na	1.1E+06				_				-			na	1.1E+06
Di-n-Butyl Phthalate	0			na	4.5E+03			na	4.5E+03											ua	4.5E+03
2,4 Dinitrophenol	0			na	5.3E+03	-	-	na	5.3E+03			-		-				-		na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	-	-	na	2.8E+02	-	-	na	2.8E+02											na	2.8E+02
2,4-Dinitrotaluene ^C	0			na	3.4E+01			na	3.4E+01					-						na	3,4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0			na	5.1E-08	_		na	5.1E-08											na	5.1E-08
1,2-Diphenylhydrazine ^C	. 0			na	2.0E+00		_	na	2.0E+00		••			_			_			na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01		_						-	2.2E-01	5.6E-02	ua	8.9E+01
Bela-Endosulfan	0									-	-	_						2.2E-01	5.6E-02		8.9E+01
1	0	2.2E-01	5.6E-02	na _	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01		-	_						ļ		na	
Alpha + Beta Endosulfan	0	2.2E-01	5,6E-02		 0 0E±01	2 2E·01	5.6E-02	-	 9 SE±01		-	_			_	_	••	2.2E-01	5.6E-02		 9 9E±01
Endosulfan Sulfate		 RE 03	 3 6E 02	na	8.9E+01	9.65.00	→ 3 EE 03	na	8.9E+01			-			-	-		9.65.00	2 55 62	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02		na	6.0E-02		-	-		_	-			8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	L		na	3.0E-01			na	3,0E-01			-		-				••		na	3.0E-01

Parameter	Background		Water Qua	lity Criteria			Wasteload	Allocations			Antidegrada	tion Baseline		Α	Intidegradatio	n Allocations			Most Limitin	g Allocation:	s
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	нн	Acute	1 1	HH (PWS)	НН	Acute		HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Ethylbenzene	0	_	-	na	2.1E+03	7-		na	2.1E+03											na	2.1E+03
Fluoranthene	0			na	1.4E+02		_	na	1.4E+02							-				na	1.4E+02
Fluorene	0	_		na	5.3E+03			na	5.3E+03			**		_		_		<u></u>		na	5.3E+03
Foaming Agents	o			na				na		<u>.</u> .						-				na	
Guttrion	o	_	1.0E-02	na			1.0E-02	na		_	_			l					1.0E-02	na	
Heptachlor ^c	o	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03		7.9E-04	<u></u>								5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^C	0		3.8E-03				3.8E-03	na	3.9E-04		-							5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^C		5.2E-01		na	3.9E-04	5.2E-01		na		_	_	-							J.UE-VJ	na	2.9E-03
Hexachlorobutadiene ^C	0			na	2.9E-03	-		na	2.9E-03			-								na	1.8E+02
Hexachlorocyclohexane	0			na	1.8E+02	-		na	1.8E+02			**	••	1	-	_		"	-	Ha	1.00.402
Alpha-BHC ^c	0			na	4.9E-02			na	4.9E-02	_		-				-				na	4.9E-02
Hexachlorocyclohexane																					
Beta-BHC ^c	0	-		na	1.7E-01		-	na	1.7E-01					-				-		na	1.7E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	1,8E+00	9.5E-01		na	1.8E+00	-	-		-		_	-		9.5E-01		na	1.8E+00
Hexachlorocyclopentadiene	0			na	1.1E+03	-	-	na	1.1E+03			-	-	-	-	-		-	-	na	1.1E+03
Hexachloroethane ^C	0			na	3.3E+01	-	-	na	3.3E+01	٠.		_		-	-			-		na	3.3E+01
Hydrogen Sulfide	0	-	2.0E+00	na	-		2.0E+00	na				-				••			2.0E+00	na	
Indeno (1,2,3-cd) pyrene ^c	0			na	1.8E-01			na	1.8E-01					-				-		na	1.8E-01
iron	0			na		~	-	na				-		-		**		-		na	-
Isophorone ^c	0			na	9.6E+03	-		na	9.6E+03						-	-		-		na	9.6E+03
Kepone	0		0.0E+00	na		-	0.0E+00	na					-	_	-				0.0E+00	na	-
Lead	o l	1.5E+02	1.7E+01	na	-	1.5E+02	1.7E+01	na		-	-							1.5E+02	1.7E+01	na	
Malathion	0	-	1.0E-01	na			1.0E-01	na		-	-			-				-	1.0E-01	na	-
Manganese	0	-	~-	na	-	-	-	na						-			**	-		na	-
Mercury	0	1.4E+00	7.7E-01			1.4E+00	7.7E-01							-				1.4E+00	7.7E-01		
Methyl Bromide				na	1.5E+03			na	1.5E+03			-			•-	-				na	1.5E+03
Methylene Chloride ^C	0			na	5,9E+03	-		na	5.9E+03				-							na	5.9E+03
Methoxychlor	0		3.0E-02	na		-	3.0E-02	na						-				-	3.0E-02	па	
Mirex	0	-	0.0E+00	na	-		0.0E+00	na	-					-					0.0E+00	na	
Nickel	0	2.1E+02	2.4E+01	na	4.6E+03	2.1E+02	2.4E+01	na	4.6E+03									2.1E+02	2.4E+01	na	4.6E+03
Nitrate (as N)	0			na		-		na												na	
Nitrobenzene	~ 0			na	6.9E+02			na	6.9E+02				_		-					na	6.9E+02
N-Nitrosodimethylamine ^C	0			na	3.0E+01			na	3,0E+01				-		_	_				na	3.0E+01
N-Nitrosodiphenylamine ^c	0			na	6.0E+01	_	-	na	6.0E+01		-			-	-					na	6.0E+01
N-Nitrosodi-n-propylamine ^c	0	-		na	5.1E+00			na	5.1E+00		-									na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00			2.8E+01	6.6E+00	na		_								2.8E+01	6.6E+00	na	
Parathion	0	6.5E-02	1.3E-02	na		6.5E-02	1.3E-02	na										6.5E-02	1.3E-02	na	
PCB Total ^C	0		1.4E-02	na	6.4E-04		1.4E-02	na	6.4E-04				_			_			1.4E-02	na	6.4E-04
Pentachlorophenol ³	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	_			_		_	-		7.7E-03	5.9E-03	na	3.0E+01
Phenol	0			na	8.6E+05		-	na	8.6E+05		_									па	8.6E+05
Pyrene	0			na	4.0E+03			na	4.0E+03										-,	na	4.0E+03
Radionuclides	0			na				na		l									_	na	
Gross Alpha Activity								••													
(pCi/L) Beta and Photon Activity	0		**	na	-			na			-			-	••					na	••
(mrem/yr)	0			na				na						1	_					na	_
Radium 226 + 228 (pCi/L)	o l			na		_		na				***	_		_	_				na	_
Uranium (ug/l)	0	_		na				na			_	_	_	_		_			-		
\ 3-7		-		110		<u></u>		114		<u> </u>		- -		1				J		na	

Parameter	Background		Water Qua	ality Criteria			Wasteload	Allocations			Antidegrada	ation Baseline		Aı	ntidegradati	on Allocations			Most Limiti	ng Aliocation	s
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн	Ac⊔te	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	па	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03		-	*•						2.0E+01	5.0E+00	na	4.2E+03
Silver	0	4.7E+00		na		4.7E+00		na										4.7E+00		na	-
Sulfate	0			na		-		na								-				na	
1.1,2,2-Tetrachioroethane ^c	0			na	4.0E+01			na	4.0E+01											na	4.0E+01
Tetrachloroethylene [©]	0			na	3.3E+01	**		na	3.3E+01											na	3,3E+01
Thallium	0	-	-	na	4.7E-01			na	4.7E-01	_				-						na	4.7E-01
Toluene	0	-	_	па	6.0E+03			na	6.0E+03								_			na	6.0E+03
Total dissolved solids	0	_		na		-		na												na	
Toxaphene [©]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03						~-	_		7.3E-01	2.0E-04	na	2.8E-03
Tributyllin	0	4.6E-01	7.2E-02	na		4.6E-01	7.2E-02	na				-	-		-	-		4,6E-01	7.2E-02	na	
1,2.4-Trichlorobenzene	0			na	7.0E+01		-	na	7.0E+01	-				-						na	7.0E+01
1,1,2-Trichloroethane ^C	0		-	na	1.6E+02		_	na	1.6E+02					_			_			na	1.6E+02
Trichloroethylene ^C	0	_		na	3.0E+02		_	na	3.0E+02		_									na	3.0E+02
2,4,6-Trichlorophenol ^C	0	_	_	na	2.4E+01			na	2.4E+01											na	2.4E+01
2-(2.4.5-Trichlarophenaxy)	0																				_
propionic acid (Silvex) Vinyl Chloride ^C	n			na na	2.4E+01		_	110	2.4E+Q1	-			_		_	_				110	2.4E+01
Zinc	0	1.4E+02	1.4E+02	na	2.6E+04	1.4E+02	1.4E+02	na na	2.6E+04			<u></u>			-	_	-	1.4E+02	1.4E+02	na	2.4E+01 2.6E+04

Notes:

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
 Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background conc.) + background conc.) for acute and chronic
 - = (0.1(WQC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0F+01
Barium	na
Cadmium	7.9E-01
Chromium III	5.2E+01
Chromium VI	6.4E+00
Copper	6.3E+00
Iron	na
Lead	1.0E+01
Manganese	na
Mercury	4.6E01
Nickel	1.4E+01
Selenium	3.0E+Q0
Silver	1.9E+00
Zinc	5.5€+01

Note: do not use QL's tower than the minimum QL's provided in agency quidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

FEMA Industrial -- Outfall 301

Permit No.: VA0091464

Receiving Stream:

Early Life Stages Present Y/N? =

Jeffries Branch, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

						•	
Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	400 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) ≈	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix ≖	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	S U	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	SU
10% Maximum pH =	su	30Q10 (Wet season)	0 MGD	- 30010 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.1 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? ≈	n						

Parameter	Background		Water Qual	lity Criteria			Wasteload	Allocations			Antidegrada	ition Baseline		А	ntidegradatio	on Allocations			Most Limitin	ng Allocations	5
(ug/l unless noted)	Сопс.	Acute	Chronic	HH (PW\$)	HH	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acute		HH (PWS)	НН	Acute	Chronic	HH (PWS)	НН
Acenapthene	0			na	9.9É+02			na	9.9E+02								-			na	9.9E+02
Acrolein	0	_		na	9.3E+00	-	-	na	9.3E+00					-						na	9.3E+00
Acrylonitrile ^c	0	-		na	2.5E+00		_	na	2.5E+00	-	_			_				-	••	na	2.5E+00
Aldrin ^C	0	3.0E+00		ла	5.0E-04	3.0E+00		na	5.0E-04	••				_				3.0E+00	••	па	5.0E-04
Ammonia-N (mg/l)																					
(Yearly) Ammonia-N (mg/l)	0	5.84E+01	7.09€+00	na	-	5.84E+01	7.09E+00	na	-		-			-	•-			5.84E+01	7.09E+00	na	•
(High Flow)	o	5.84E+01	7.09E+00	па		5.84E+01	7.09E+00	na									-	5.84E+01	7.09E+00	na	
Anthracene	0			ла	4.0E+04	-		па	4.0E+04		_			_			-			na	4.0E+04
Antimony	0 '	••		па	6.4E+02	-	-	na	6.4E+02	·							-		-	na	6.4E+02
Arsenic	О	3.4E+02	1.5E+02	na		3.4E+02	1.5E+02	na								••	_	3.4E+02	1.6E+02	na	
Barium	0			na				na				••					_			па	
Benzene ^C	0			па	5.1E+02			na	5.1E+02						_	_				na	5.1E+02
Benzidine ^C	0			na	2.0E+03		_	na	2.0E-03					-		_	_			па	2.0E-03
Benzo (a) anthracene ^c	0			na	1.8E-01	_	_	na	1.8E-01		_		_					••	••	па	1.8E-01
Benzo (b) fluoranthene ^c	0	_		na	1.8E-01		-	па	1.8E-01	_	_	-							••	na	1.8E-01
Benzo (k) fluorenthene ^c	o		-	na	1.8E-01	_	_	na	1.8E-01			_					_			na	1.8E-01
Вепzo (a) pyrene ^С	0			па	1.8E-01		_	па	1.8E-01			- 					-			па	1.8E-01
Bis2-Chloroethyl Ether ⁶	0			na	5.3E+00	_		na	5.3E+00			_	_			-				na	5.3E+00
8is2-Chloroisopropyl Ether	0			na	6.5E+04		_	na	6.5E+04				_	_	-	-		<u> </u>		па	6.5E+04
Bis 2-Elhylhexyl Phthalate ^c	0			na	2.2E+01		_	na	2.2E+01			<u></u>	_		-					na	2.2E+01
Bromoform ^C	0	-	_	na	1.4E+03			па	1.4E+03											na	1.4E+03
Butylbenzylphthalate	0	_		па	1.9E+03			na	1.9E+03										••	na	1.9E+03
Cadmium	0	1.9E+01	3.4E+00	na	-	1.9E+01	3.4E+00	na	1.92,03					-				1.9E+01	3.4E+00	na na	
Carbon Tetrachloride ⁶	0			па	1.6E+01			na	1.6E+01			-	_					1.96+03			- 1.6E+01
Chlordane ^c	0	2.4E+00	4.3E-03	па	8.1E-03	2.4E+00	4.3E-03	nа	8.1E-03			-				-			 4 2E 02	na	
Chloride	ō	8.6E+05	2.3E+05	па	D. (E-03		2.3E+05	na	0.16-00		-	-	~		-	-		2.4E+00	4.3E-03	na	8.1E-03
TRC	ő	1.9E+01	1.1E+01	na		1.9E+01	1.1E+01	na na	.	••				-			•	8.6E+05	2.3E+05	na 	••
Chlorobenzene	٥	1.02.01	1.12.01	na	1.6E+03		1.16*01	na	1.6E+03		••	-						1.9E+01	1.1E+01 	na na	 1,6E+03

Parameter	Background		Water Qua	ility Criteria			Wasteload	Allocations			Antidegrada	tion Baseline		Ar	ntidegradation	Allocations			Most Limitir	ng Allocations	3
(ug/l unless noted)	Çanc.	Acule	Chronic	HH (PWS)	нн	Acule	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн	Acute	Chronic I	HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН
Chlorodibromomethane ^C	0			na	1.3E+02			na	1.3E+02	_	••	<u> </u>					_			na	1.3E+02
Chloroform	0			na	1.1E+04	_		na	1.1E+04	_		_					_			na	1.1E+04
2-Chloronaphthalene	0			na	1.6E+03			na	1.6E+03	-										na	1.6E+03
2-Chlorophenol	0			na	1.5E+02		-	na	1.5E+02		_									па	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na		8.3E-02	4.1E-02	na									_	8.3E-02	4.1E-02	na	
Chromium III	Ů	1.8E+03	2.3E+02	na		1.8E+03	2.3E+02	na				-•			••			1.8E+03	2.3E+02	na	
Chromium VI		1 6E+01	1.1E+01	na	<u>.</u> .	1.6E+01	1.1E+01	na		۹.				-			••	1.6E+01	1.1E+01	na	
Chromium, Total	0	-		1.0E+02			_	na				_		_						na	
Chrysene C	0			na	1.8E-02			na	1.8E-02	_			_]		_				na	1.8E-02
Copper	0	5.0E+01	2.9E+01	na		5.0E+01	2.9E+01	na				-			-	-	_	5.0E+01	2.9E+01	ла	
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04									2.2E+01	5.2E+00	na	1.6E+04
DDD c	0	_		na	3.1E-03		_	na	3.1E-03					_				-		na	3.1E-03
DDE C	0	-	_	na	2.2E-03		-	na	2.2E-03			-								na	2.2E-03
DDT °	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2 2E-03									1.1E+00	1.0E-03	na	2.2E-03
Demeton	0		1.0E-01	na			1.0E-01	na				_		-	_	_			1.0E-01	na	
Diazinon	0	1.7E-01	1.7E-01	na		1.7E-01	1.7E-01	na							_	-		1,7E-01	1.7E-01	na	
Dibenz(a,h)anthracene ^C	0			па	1.8E-01			na	1.8E-01		_	_								na	1.8E-01
1,2-Dichlorobenzene	0	_		na	1,3E+03			na	1.3E+03											ma	1.3E+03
1,3-Dichlorobenzene	0		-	na	9.6E+02			na	9.6E+02											na	9.6E+02
1,4-Dichlorobenzene	0		_	ла	1.9E+02			па	1.9E+02		_					••				na	1.9E+02
3,3-Dichlorobenzidine ^C	0			na	2.8E-01			na	2.8E-01						-	-				na	2.8E+01
Dichlorobromomethane C	0			na	1.7E+02			na	1.7E+02						_					na	1.7E+02
1,2-Dichloroelhane ^C	0			na	3.7E+02			na	3.7E+02			-								na	3.7E+02
1,1-Dichlorgelhylene	0		-	na	7.1E+03			na	7.1E+03					_						na	7.1E+03
1,2-trans-dichloroethylene		_	_	na	1.0E+04			na	1.0E+04		_						••		••	na	1.0E+04
2,4-Dichlorophenol	0			na	2.9E+02	!	_	na	2.9E+02							-			••	na	2.9E+02
2,4-Dichlorophenoxy						İ														na	
acetic acid (2,4-D)	0			па		_	-	na	4 55 . 00	••	-		-	<u>"</u>	-	-			••	na	1.5E+02
1,2-Dichloropropane ^C	0			na	1.5E+02	-		na	1.5E+02		-				-		••	<u></u>		na	2.1E+02
1,3-Dichloropropene ^C	0 '			na	2.1E+02	-		na	2.1E+02		-	••				-		2.4E-01	5.6E-02		5.4E-04
Dieldrin ^C	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04		-		••	_	••	••		ł		na na	4.4E+04
Diethyl Phthalate	0	_	-	na	4.4E+04		-	na	4.4E+04	-	-		-		•			"			8.5E+02
2,4-Dimethylphenol	0			na	8.5E+02	_	-	na	8.5E+02				-					-	•-	ná	1.1E+06
Dimethyl Phthalate	0		••	na	1.1E+06	_		na	1.1E+06		-		-	-	_	_	••		••	na	4.5E+03
Di-n-Butyl Phthalate	0			na	4.5E+03	_		na	4.5E+03			_	-	-	-	•				na	5.3E+03
2,4 Dinitrophenol	0			na	5.3E+03			na	5.3E+03	-			-	_	-	-	-			na	2.8E+02
2-Methyl-4,6-Dinitrophenol	0		-	na	2.8E+02	-	-	na	2.8E+02		-		••	_	**				••	na na	3.4E+01
2,4-Dinitrotoluene ^c Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0		_	na	3.4E+01 5.1E-08	-		na na	3.4E+01 5.1E-08		_					_				па	5.4E+01
1,2-Diphenylhydrazine ^C	-				2.0E+00		-		2.0E+00						••		_			na	2.0E+00
	0	 2.2E.04	 5 SE 02	na	2.0E+00 8.9E+01		5.6E-02	na na	8.9E+01		_						_	2.2E-01	5.6E-02	กล	8.9E+01
Alpha-Endosulfan Beta-Endosulfan	0	2.2E-01	5.6E-02	na		2.2E-01					_							2.2E-01	5.6E-02	na	8.9E+01
	0	2.2E-01	5.6E-02	na	8. 9E+ 01	2.2E-01	5.6E-02	na _	8.9E+01		-		-	<u>.</u>		-	-	2.2E-01	5.6E-02		0.3E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02		e 0E+01	2.2E-01	5.6E -0 2	-	 9 0E±01		••		-		_	_		2.2E-01	5.62-02	na	8.9E+01
Endosulfan Sulfate	0		 3 EE 03	na	8.9E+01	9 65 00		na	8.9E+01		-	_	-		_	_		8.6E-02	3.6E-02		6.0E-02
Endrin	0	8.6E-02	3.6E-02	па	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	-		_		_	-	-		1		na	3.0E-01
Endrin Aldehyde	0		-	ла	3.0E-01			na	3.0E-01					_						na	3.UE-UT

Parameter	Background		Water Qu	ality Criteria			Wasteload	d Allocations	·		Antidegrada	ilion Baseline		A	ntidegradalio	n Allocations		Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн	Acute	Chronic	HH (PWS)	нн
Ethylbenzene	0			na	2.1E+03	_	-	na	2.1E+03											na	2.1E+03
Fluoranthene	o			na	1.4E+02		***	na	1.4E+02		~-	~~							**	na	1.4E+02
Fluorene	0			na	5.3E+03	_		na	5.3E+03				_			_	_	-		na	5.3E+03
Foaming Agents	0			па				na											~	па	0.0E.00
Guthion	0		1.0E-02	na			1.0E-02	na											1.0E-02	па	
 Heptachlor ^c	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04		_			-			-				
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8⊑-03		3.9E-04					- "			_	5.2E-01	3.8E-03	na	7.9E-04
Hexachlorobenzene ^G	0					3.2E-01		na						_				5.2E-01	3.8E-03	na -	3.9E-04
Hexachlorobutadiene ^C	ł			na	2.9E-03			na	2.9E-03		**	~		-				"	٠-	N∂	2.9E-03
Hexachlorocyclohexane	0			na	1.8E+02	-		na	1.8E+02											na	1.8E+02
Alpha-BHC ⁶	0			na	4.9E-02			na	4.9E-02											na	4.9E-02
Hexachlorocyclohexane					4.02 02			11.2	4.50 02									"	-	110	4.52.02
Beta-BHC ^c	0	_	_	na	1.7E-01			na	1.7E-01	-										na	1.7E-01
Hexachlorocyclohexane								•													
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01		na	1.8E+00						-			9.5E-01	-	na	1.8E+00
Hexachlorocyclopentadiene	0			na	1.1E+03			na	1.1E+03	-						-				na	1.1E+03
Hexachloroethane ^C	0			na	3.3E+01			na	3.3E+01						-					na	3.3E+01
Hydrogen Sulfide	0	.,	2.0E+00	na			2.0E+00	па		-								-	2.0E+00	na	••
Indeno (1,2,3-cd) pyrene ^c	0			na	1.8E-01			na	1.8E-01									_		па	1.8E-01
Iron	0			na				na				_								па	
(sopharone ^C	o			na	9.6E+03			na	9.6E+03		• •	***	~~			area.				na	9.6E+03
Kepone	0		0.0E+00	па			0.0E+00	na				_		_					0.0E+00	па	
Lead	0	6.9E+02	7.9E+01	na		6.9E+02	7.9E+01	na										6.9E+02	7.9E+01	па	
Malathion	0		1.0E-01	na			1.0E-01	na	~			_									
Manganese	0			na			1.00-01					-							1.0E-01	กล	
Mercury	0	1.4E+00	7.7E-01			ľ	7.7E-01	na		-	••	_		_			-	4.45.00		па	-
Methyl Bromide	0					1.4E+00	1.16-01		4.55.00					-			••	1.4E+00	7.7E-01	••	
Methylene Chloride C				na	1.5E+03		••	na	1.5E+03	-	••				~-	_		-		na	1.5E+03
1	0			na	5.9E+03	-		na	5.9E+03		**	_			_					na	5,9E+03
Methoxychior	0		3.0E-02	na		-	3.0E-02	na						~			-	**	3.0E-02	na	-
Mirex	0	_	0.0E+00	na			0.0E+00	na						-					0.0E+00	na	-
Nickel	0	5.9E+02	6.5E+01	na	4.6E+03	5.9E+02	6.5E+01	na	4.6E+03									5.9E+02	6.5E+01	na	4.6E+03
Nitrate (as N)	0			na				na								••	•			na	••
Nitrobenzene	0			na	6.9E+02	-		na	6.9E+02				~~						-	na	6.9E+02
N-Nitrosodimethylamine ^C	0			na	3.0E+01		'	na	3.0E+01					-	_				••	na	3.0E+01
N-Nitrosodiphenylamine ^C	a			na	6.0E+01			na	6.0E+01								~-	-		na	6.0E+01
N-Nitrosodi-n-propylamine ^c	o			na	5.1E+00			ла	5.1E+00										**	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	_	-	2.8E+01	6.6E+00	na	-					_				2.8E+01	6.6E+00	na	
Parathion	0	6.5E-02	1.3E-02	na		6.5E-02	1.3E-02	na						_				6.5E-02	1.3E-02	na	
PCB Total ^C	0		1.4E-02	na	6.4E-04		1.4E-02	na	6.4E-04			-			_			***	1.4E-02	na	6.4E-04
Pentachiorophenol ^c	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	_								7.7E-03	5.9E-03	na	3.0E+01
Phenol	0				8.6E+05	_		na	8.6E+05											na	8.6E+05
Pyrene	0	_		na	4.0E+03	<u></u>		na	4.0E+03		_				-	_			-		4.0E+03
Radionuclides	0			па			 	na						-			•		-	na	
Gross Alpha Activity	,		_	IId				IId						-			-	••		na	••
(pCi/L)	0	••		na				na								-	-			na	
Beta and Photon Activity (mrem/yr)	0			na	_		_	00													
Radium 226 + 228 (pCi/L)	o l		**			-		na				••	~~	-			-			na	-
Uranium (ug/l)				na		-		na				-			_		-			na	
oransam (aðsi)	0	<u></u>	~	na				na	~											na	-

Parameter	Background		Water Qua	ality Criteria	e		Wasteload	d Allocations			Antidegrada	tion Baseline		A	ntidegradati	on Allocations			Most Limiti	ng Aliocations	s
(ug/l unless noted)	Canc.	Acute	7	HH (PWS)	нн	Acule		HH (PWS)	нн	Acute		HH (PWS)	нн	Acute	Chronic	HH (PWS)	НН	Acute	Chronic	HH (PWS)	нн
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2. 0 E+01	5.0E+00	na	4.2E+03									2.0E+01	5.0E+00	na	4.2E+03
Silver	0	3.7E+01		na	-	3.7E+01		na										3.7E+01		na	-
Sulfate	0			na		_		na		-				-	-					na	-
1.1,2,2-Tetrachloroethane ^c	0			na	4.0E+01	-		na	4.0E+01			-			-					na	4.0E+01
Tetrachloroethylene ⁴	0	- -		na	3.3E+01			na	3.3≘+01					-						na	3.3E+01
Thallium	0			ла	4.7E-01			na	4.7E-01			-								na	4.7E-01
Toluene	0			na	6.0E+03			na	6.0E+03						**			**	^-	na	6.0E+03
Total dissolved solids	0			na			-	na								-				na	
Toxaphene ^c	0	7.3E-01	2.0E-04	па	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03			-		-				7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na		4.6E-01	7.2E-02	na	••			-	-		-	-		4.6E-01	7.2E-02	па	
1,2,4-Trichlorobenzene	0			na	7.0E+01		-	na	7.0E+01											na	7.0E+01
1,1,2-Trichloroethane ^C	0	-		na	1.6E+02			กล	1.6E+02	-					**					na	1.6E+02
Trichlaroethylene ^C	0			na	3.0E+02			na	3.08+02					-				••		na	3.0E+02
2,4,6-Trichlorophenol ^c	0			na	2.4E+01			na	2.4E+01					-						na	2.4E+01
2-(2,4.5-Trichlorophenoxy) propionic acid (Silvex)	D			na				na												na	
Vinyl Chlaride ^C	D			na	2.4E+01			na	2.4E+01					-	-	alle.		<i>"</i>		na	2.4E+01
Zinc	0	3 8E+02	3.8E+02	na	2.6E+04	3.8E+02	3.8E+02	na	2.6E+04			-						3.8E+02	3.8E+02	na	2.6E+04

Notes:

- 1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- 2. Discharge flow is highest monthly average or Form 2C maximum for industries and design flow for Municipals
- 3. Metals measured as Dissolved, unless specified otherwise
- 4. "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
 Antidegradation WLAs are based upon a complete mix.
- 6. Antideg. Baseline = (0.25(WQC background conc.) + background conc.) for acute and chronic
 - = (0.1(WQC background conc.) + background conc.) for human health
- 7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)	٦,
Antimony	6.4E+02	٦,
Arsenic	9.0E+01	4
Barium	na	١
Cadmium	2.0E+00	١
Chromium III	1.4E+02	
Chromium VI	6 4E+00	l
Copper	1.8E+01	
Iron	na	
Lead	4.7E+01	1
Manganese	na	
Mercury	4.6E-01	ŀ
Nickel	3.9E+01	l
Selenium	3.0€+00	Ī
Silver	1.5E+01	
Zinc	1.5E+02	

Note: do not use QL's lower than the minimum QL's provided in agency guidance

5/16/2014 2:02:16 PM

Facility = FEMA Industrial Outfall 301--Cooling
Chemical = Copper
Chronic averaging period = 4
WLAa = 50
WLAc =
Q.L. = 5
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 105
Variance = 3969
C.V. = 0.6
97th percentile daily values = 255.508
97th percentile 4 day average = 174.697
97th percentile 30 day average = 126.635
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 50
Average Weekly limit = 50.000000000001
Average Monthly Llmit = 50.0000000000001

The data are:

105

To:

Anna Westernik

From:

Jennifer Carlson

Date:

May 16, 2014

Subject:

Planning Statement for U.S. FEMA Industrial (new outfall)

Permit Number:

VA0091464

Information for Outfall 003:

Discharge Type:

Minor Industrial

Discharge Flow:

MGD

Receiving Stream:

Jeffries Branch, UT

Latitude / Longitude:

39° 03' 31" N; 77° 53' 06"

Streamcode:

1aXLA

Waterbody:

VAN-AOSR

Water Quality Standards: Class III, Section 9

Rivermile:

0.60

Drainage Area:

<0.1 mi²

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges to an unnamed tributary to Jeffries Branch, which is not monitored and assessed by DEQ. The nearest downstream DEQ monitoring station is 1aJEE002.22, located on Jeffries Branch at the Route 743 bridge crossing, approximately 3.3 miles downstream of Outfall 003. The following is the water quality summary for this segment of Jeffries Branch, as taken from the 2012 Integrated Report:

Class III, Section 9.

DEQ monitoring station located in this segment of Jeffries Branch:

Biological manitoring station 1aJEE002.22

Biological monitaring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Additionally, citizen manitoring finds a medium probability af odverse canditions for bioto.

The E. coli doto collected by the citizen monitoring group indicate that a water quality issue may exist far the recreotion use; however, the methodology and/ar data quality has not been appraved far such a determination. The recreation use is noted with an abserved effect.

The fish consumption and wildlife uses were not assessed.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Completed		WLA	Basis for WLA	TMDL Schedule
Impairment	Information in ti	he 2012 Integrated R	eport				
Jeffries Branch	Aquatic Life	Benthic Macroinvertebrates	1.4 miles	No		40 == 140	2024
Panther Skin Creek	Recreation	E. coli	5.6 miles	Goose Creek Watershed Bacteria 05/01/03 (Mod. 10/27/06)	None (not expected to discharge pollutant)		
	Fish Consumption	PCBs	35 miles	No			2018
Goose Creek	Aquatic Life	Benthic Macroinvertebrates	36.1 miles	Goose Creek Watershed Benthic 04/26/04	8.5 tons/yr TSS	70 mg/L TSS 160 acres	N/A

Outfall 002 of this facility was assigned a WLA for 8.5 tons/year of TSS in the 2011 permit issuance, after the Benthic TMDL for the Goose Creek watershed was established. The WLA was calculated based on the outfall drainage area of 160 acres and a TSS concentration of 70 mg/L. The Goose Creek Benthic TMDL included a factor of 5 for the permitted design flow for each facility included in the TMDL as a conservative measure to build in future growth in the watershed. A total of 204.7 tons/year of TSS was allocated for future growth. Although the future growth for the watershed was determined by the existing design flow of each facility in the watershed, the future growth is available for both new and expanding permits in the watershed. The allocation for Outfall 002 was taken from the 204.7 tons/year TSS allocation for future growth.

With the addition of Outfall 003 to this facility, the WLA of 8.5 tons/year of TSS will be allocated to both Outfall 002 and Outfall 003. These outfalls drain the eastern side of the facility to the same receiving stream, an unnamed tributary to Jeffries Branch.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

In support of the development of a benthic TMDL for Jeffries Branch in the near future, DEQ staff requests that this facility monitor quarterly nutrient monitoring (total phosphorus, nitrate, nitrite and TKN) at this outfall. Nutrient monitoring is requested of facilities that are located within a distance of 5 miles upstream of a benthic impairment.

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within 5 miles of this discharge.

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater/storm water into water bodies in Loudoun/Clarke Counties, Virginia.

PUBLIC COMMENT PERIOD: August 13, 2014 to September 12, 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater/Storm Water issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Federal Emergency Management Agency, Mount Weather Emergency Operations Center, P.O. Box 129, Mount Weather, VA 22611; VA0091464

NAME AND ADDRESS OF FACILITY: Mount Weather Emergency Operations Center, 19844 Blue Ridge Mountain Road, Mt. Weather, VA 20135

PROJECT DESCRIPTION: The Federal Emergency Management Agency has applied for modification of a permit for the Federal industrial discharges at the Mount Weather Emergency Operations Center. The modification of the process would allow an additional internal industrial wastewater outfall and storm water outfall to discharge to the eastern side of the facility. The applicant proposes to release industrial wastewater and storm water from a Federal facility at variable rates of flow into an unnamed tributary of Jefferies Branch in Loudoun County and into an unnamed tributary of Reservoir Hollow in Clarke County; both tributaries are located in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, total suspended solids, total residual chlorine, total petroleum hydrocarbons, temperature, and whole effluent toxicity. The permit will monitor the following pollutants: total Kjeldahl nitrogen, nitrate and nitrite, total nitrogen, total phosphorus, total recoverable chromium, total recoverable copper, cyanide, total recoverable nickel, total recoverable zinc, and total hardness.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Anna T. Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193 Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov Fax: (703) 583-3821